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See story, page 21

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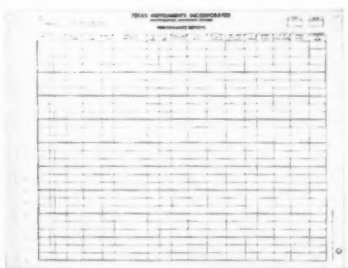

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Administrative Management

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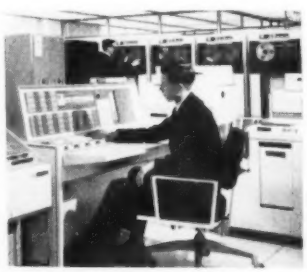

It seems fitting that electronic data processing, which this magazine pioneered for a decade, should be the subject of its first cover under the new name Administrative Management. *The installation depicted is at 1960 "Office of the Year" winner Union Carbide Corp., New York.*

May, 1961
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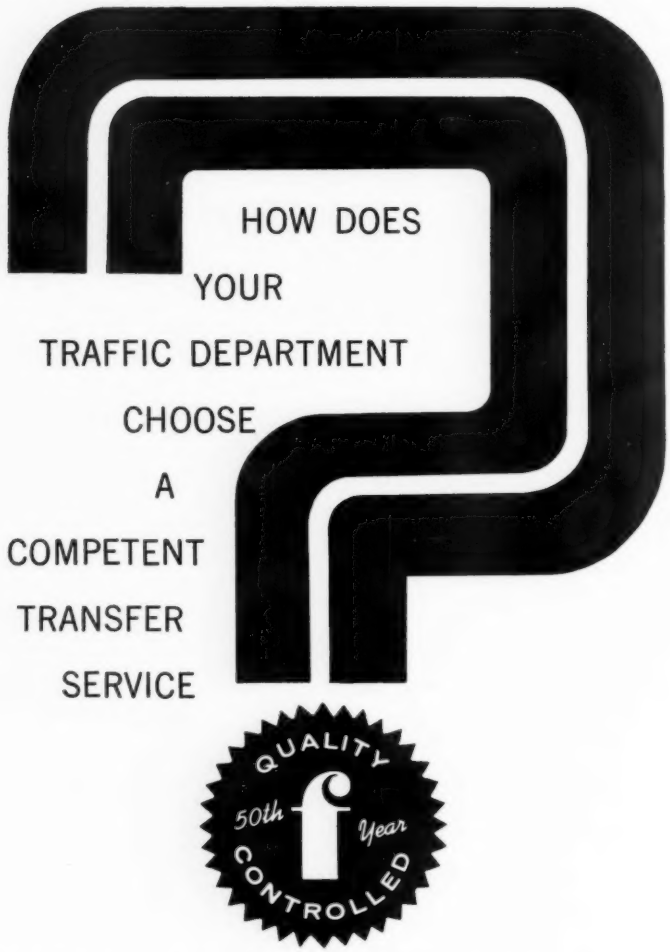

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Coming Events

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Place: Hotel Roosevelt.

ASPA 13th Annual Conference, Minneapolis, May 2-4.
Sponsor: American Society for Personnel Administration.
Place: Hotel Radisson.

NOMA International Conference and Office Exposition, St. Louis, May 7-11.
Sponsor: National Office Management Association.
Place: Sheraton-Jefferson Hotel, Keil Auditorium.

Ninth Annual Western Joint Computer Conference, Los Angeles, May 9-11.
Sponsor: National Joint Computer Committee.
Place: Ambassador Hotel.

Mid-South Business Equipment Exposition, Greensboro, N. C., May 9-11.
Sponsors: National Office Management Association and National Association of Accountants.
Place: Greensboro War Memorial Coliseum.

AIIE Twelfth Annual National Conference, Detroit, May 11-13.
Sponsor: American Institute of Industrial Engineers.
Place: Sheraton Cadillac Hotel.

Annual International Conference and Business Show. Los Angeles, May 14-17.
Sponsor: Insurance Accounting and Statistical Association.
Place: Biltmore Hotel.

Work-Factor Associates' Spring Conference, Chicago, May 18.
Sponsor: Work-Factor Associates of the Midwest.
Place: McCormick Place.

FGAA Tenth Annual Symposium, Washington, D. C., May 18-20.
Sponsor: Federal Government Accountants Association.
Place: Shoreham Hotel.

Western Systems Conference, Los Angeles, May 25.
Sponsors: Six Southern California chapters of the Systems and Procedures Association.
Place: Statler-Hilton Hotel.

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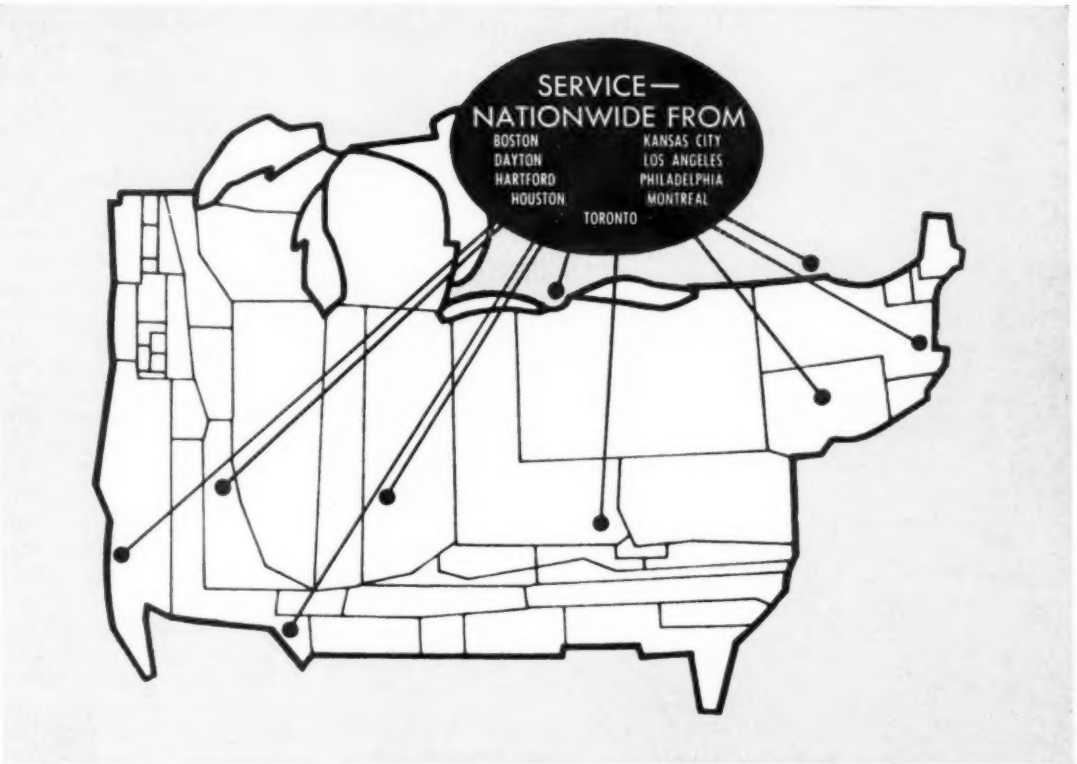

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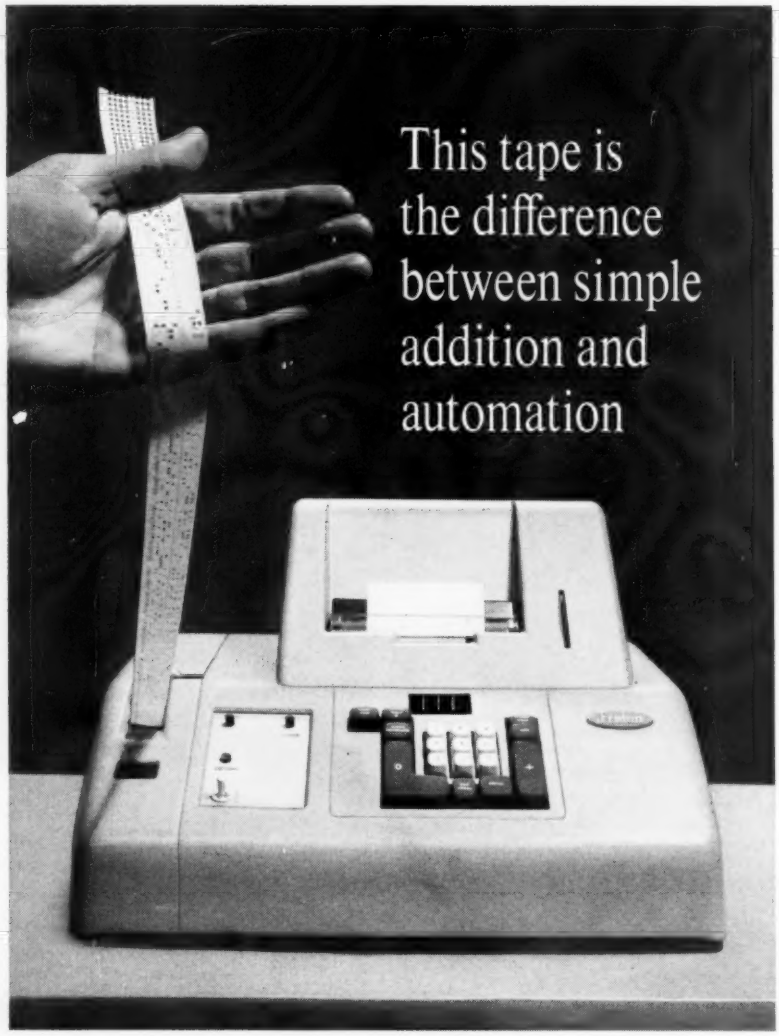

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This Month

Douglas D. Hubbard, who this month rebuts the obsession for computers held by many data processing specialists, is the data processing supervisor of Cowlitz County Public Utility District No. 1, Longview, Wash. In 1959 his article in the New York *Times*, "What Makes the Installation Run?" won first place in a competition sponsored by the Office Executives Association . . . Editor **Robert Smith** continues his analysis of the personnel paradox (people seek jobs while jobs seek people) by examining the Holland report — its shortcomings and also its alarmingly accurate insight into the problems of automation . . . **John Brown** contributes another article in the series on data processing for small and medium-size business. Mr. Brown, whose article this month deals with the need for bookkeeping machines in this era of computers, has also published articles on better correspondence methods . . . This month's preview of the NOMA conference in St. Louis will be followed by complete coverage in succeeding issues . . . The concluding report on the American Management Association's electronic data processing conference stresses the need for adequate planning to avoid the potential disappointments of using a computer . . . The six winners in *Administrative Management*'s eleventh annual "Office of the Year" competition are described and illustrated . . . "Tools of the Office" offers a complete round-up on office typewriters, plus information on carbon paper and typewriter ribbons . . . The Russian accomplishment of placing the first human in an orbit around the earth, according to this month's editorial, owes some measure of its success to an efficient system of coordinating rapidly changing scientific data . . . The "Office Design" series, which was interrupted this month to provide space for the "Office of the Year" stories, will be resumed next month with an analysis of office walls—maintenance, murals, wallpaper, use of color, partitions and movable walls, and acoustical materials.

SOME MINOR DISCREPANCIES

WE HAVE all heard of heroic accountants who have labored long into the night tracking down the one-cent discrepancies that kept the books from balancing. By all sound accounting theory there can be no two ways about it: everything must prove out, everything must balance. In practice, of course, well-run companies provide themselves with "Overs-and-Shorts" accounts to absorb the small discrepancies which do occur. It's obviously cheaper to do it this way than to keep everyone overtime looking for a few elusive dollars.

Undoubtedly it would be fine to administer a company with such precision that there'd be no need for Overs-and-Shorts, whose existence in reality only serves to advertise that however good our records are, they aren't perfect.

But with all that, private business can derive a measure of satisfaction from a recent report on the state of things in *governmental* ledgers where payments between nations are noted.

With the world the way it is, one could not expect that every last dollar, pound, franc, mark, peso or rupee of international commerce be accounted for completely. Countries, like companies, need a little extra for Overs-and-Shorts—or as they put it with diplomatic euphemism, "Errors and Omissions."

How much extra? Ten thousand dollars, say? Hardly enough—we're dealing with governments, remember. All right, one-hundred thousand? Not enough. Then certainly a million? Still not enough, and if you go to a *hundred* million you're still short of the mark. (No monetary pun intended—the Germans' accounts are just as bad as ours.)

In 1960—to get to the point—the portion of this country's payments deficit accounted for by "Errors and Omissions" amounted to nearly one and three-quarter *billion* dollars! This figure almost equals the total deficit of all transactions that *were* recorded.

Where the erroneous and omitted money went to no one really knows. Financiers put much of the blame on recent "hot money" movements—the waves of speculative trading born of devaluation or revaluation rumors. Funds fly across international borders so swiftly that monetary authorities can't keep up with it. All a government knows is what its international balance sheet shows at the beginning and end of a year, and what its recorded transactions have been within the year. The total gain or loss of the transactions ought to equal the difference between the two balance sheets—but they never do. In Great Britain, for example, last year's E&O imbalance hit £377 million (or $1.05 billion), but in her case it was "found" money, easing rather than deepening her deficit.

In light of this, the typical American corporation—even with Overs-and-Shorts—stands like a paragon of accuracy. Let this be a tribute and a message of understanding to all our bookkeepers and statisticians and accountants who keep our affairs so tidy—who stand and wait in that moment of truth when calculators click out that final number which answers the fateful query: do we balance?

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NEW CONCEPTS IN PRACTICAL OFFICE AUTOMATION

(Circle No. 49 on Reader Inquiry Card)

Administrative Management

May 1961

IT ISN'T GOING TO BE ALL COMPUTERS

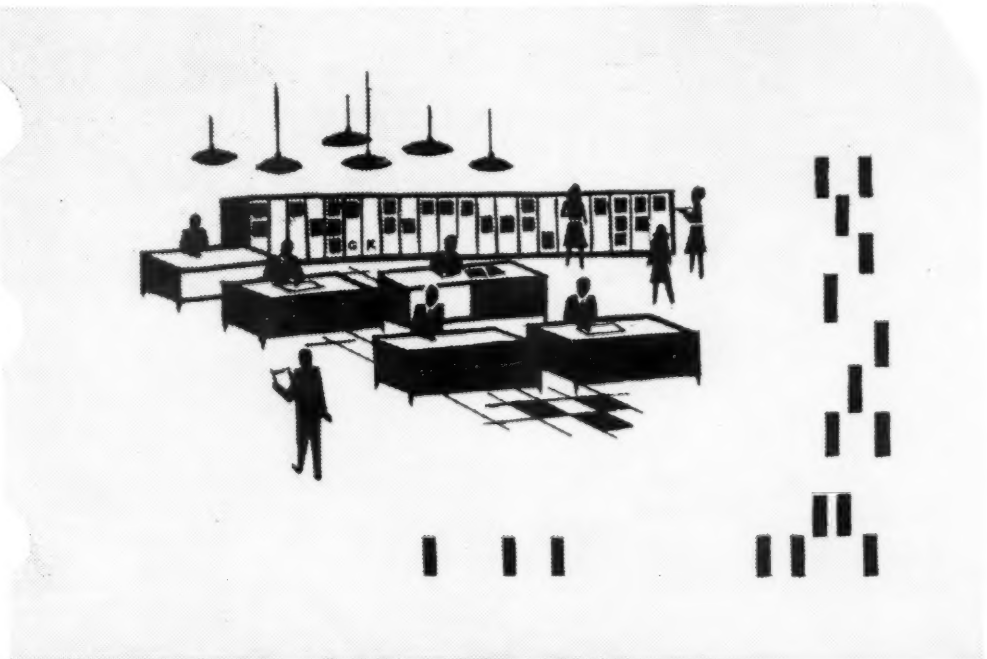
Despite computer advances, punched card equipment is here to stay

By DOUGLAS D. HUBBARD

A COLOSSAL misconception seems to exist today in the data processing field. It goes something like this: "Unless we all drop whatever else we are doing as machine accountants, systems analysts, or operators of conventional electric accounting machine equipment and become computer men, the jig will soon be up. 'Univacs' and '700 Series' and other electronic wonders of similar magnitude are lurking behind every desk to leap out suddenly and strangle every data processor who doesn't wear the title of programmer or who is not a computer systems specialist.

"The whole field is going to have to be surrendered to magnestic tape, magnetic ink, immense computers, and huge networks of data transmission. Optical scanners will do all the reading, high-speed printers will produce all the records, and monumental storage units of cores, drums, and discs will do all the remembering. The small and medium punched card accounting installation is doomed, the punched card itself is through, and there is no future and very little present left for those currently engaged in activities at the level of anything less than a computer-dominated automation endeavor."

This seems to be a state of mind gradually brought about by the vast publicity attendant to major developments in the electronic data processing industry in recent years. These include the amazing "breakthroughs" in information retrieval, random access, data transmission, and now even electronic computers that function in nanoseconds—billionths of a second. Although the significance and the enormity of these developments justify all the publicity they get, many of the announcements concerning developments contain



The punched card "will undoubtedly still be around when today's computers have been gobbled up by tomorrow's computers."

the built-in implication that the price of their advent is the obsolescence of all predecessors and everything related to them.

This implication, especially concerning computers, has led to the disturbing fact that a growing number of people who are important to the data processing field in areas other than at the computer level are gradually allowing themselves to subscribe to the belief that "it's going to be *all* computers."

It *isn't* going to all be computers. The small and medium sized installation is *not* doomed. The punched card is *not* through. A man *doesn't* have to be a computer specialist to be important to the data processing field or to have a future in it.

As a matter of fact computers are *not* "taking over". They're simply doing a job—and a good one. These jobs can be done better by computers than by machine accounting—but not in areas where machine accounting could do them better. Many disturbed data processors forget about those areas. The key to this whole "computers vs. machine accounting" conflict is the need to recognize that the "versus" doesn't belong in it at all. Conventional punched card equipment and computers are not at odds any more than a motorcycle and a bicycle are at odds. One is a complement of the other. When one is outgrown, the other is acquired. Or, in the unusual case when one is to small right at the outset, it is skipped over in favor of the larger. This can be applied to either machine accounting or bicycles. And when a bicycle that has functioned admirably, but nevertheless is no longer physically able to meet the increasing demands imposed on it, the next step is a motorcycle. The same is true of machine accounting and computers.

As far as "this punched card stuff lasting," it will undoubtedly still be around when today's computers have been gobbled up by tomorrow's computers. Consider a few reasons why it is going to last:

Cards are most economical input

First, consider IBM, the leader in the field. While the company's policy forbids the disclosure of the number of its various systems installed, IBM officials readily admit that the unit record equipment comprises the major part of their business. And at a time when their sales were zooming in the electronic computer line they saw fit to introduce the "Series 50" equipment, which is standard punched card equipment that operates at reduced speed. The "Series 50" devices have been well received, and many of them have already graduated to standard installations. More units are certain to follow.

In addition to the acceptance of "Series 50" installations by small businesses, many standard installations have added "Series 50" machines which they can later convert to standard speeds at their option.

Thus, the point cannot be over-emphasized that

Despite widespread use of computers for many commercial purposes . . .

most of the punched card equipment in the nation is found in installations that not only do not have a computer, but have no plans for employing one in the future either because of the limited size of the company or because of the prohibitive cost involved.

It has been suggested that the use of computers in the hands of "service bureaus" would someday make it possible for the small business that has its own installation today to forego it in favor of using a service bureau to process data. The problem here is: What would be used as input? Punched card equipment is recognized to be the most economical means of entry to automatic data processing.

Another perfectly logical suggestion is that computer costs may not always be as prohibitive as they currently are. This probably will be true. Even so, many firms that have expanded to an electronic data processing system have kept their unit record equipment. Many other firms have both large scale-systems and unit record equipment existing side by side.

Virtually every commercial processing system, including tape-oriented systems, uses punched cards as a means of input and output. It isn't unusual to find configurations of the IBM 650, RAMAC 305, and the 1401 in which punched cards are the principal input/output medium.

As for the punched card being through, applications for it are constantly being multiplied as new uses for it continue to be found. The new Tele-processing devices—equipment that transmits machine information over long distances—are an example. The punched card plays a major role. The IBM Data Transceiver

. . . many firms retain their unit record equipment for complementary data processing.

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Punched card survives

equipped with Digital Subset Feature transmits and receives punched card data over conventional dial telephone lines at regular message rates, or over new high-speed telegraph circuits, and the transmission of data over long distances is one of the fastest growing areas in the field of data processing. And it does not depend on the presence of a computer in the system.

Another example of a new application for the punched card is the IBM 357 Data Collection System—equipment that permits work-in-progress reports to be flashed by means of punched card from remote stations to a central location.

As for a man's importance to the data processing field at a level other than the computer one, it is mandatory that every data processor at every level of the field recognize and appreciate that data processing does not mean just computers, or just machine accounting, or just scanners. Data processing is a conglomeration of greatly varied activities that deal with greatly varied problems under greatly varied conditions using greatly varied equipment at greatly varied levels. The significant point is: The levels are always going to exist.

It *isn't* going to be all computers. The small or medium sized installation is *not* doomed. The punched card is *not* through. A man *doesn't* have to be a computer specialist to be important to the data processing field or to have a future in it.

SEE ALSO . . .

"Why use a bookkeeping machine in the era of electronic computers?" page 26.

Author John Brown arrives at a similar conclusion on the widespread belief that computers are taking over the office and replacing other methods of data processing.

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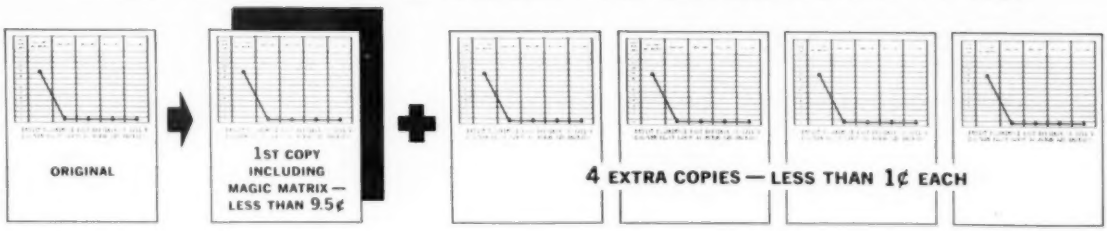

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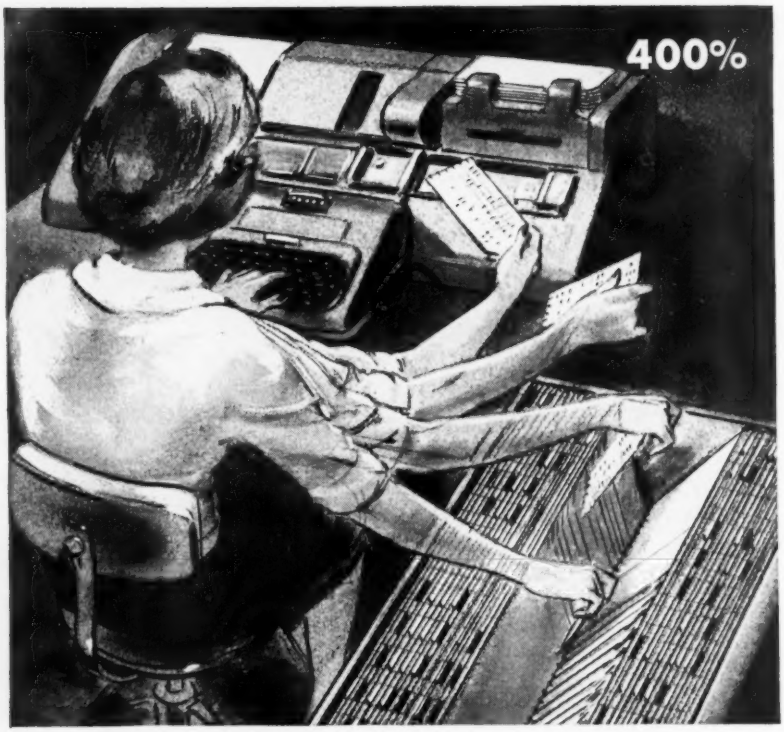

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Kleinschrod named editor of Administrative Management

Geyer-McAllister Publications announces the resignation of Robert M. Smith as editor of *Administrative Management,* and as editorial director and vice president of the firm. He is succeeded in these capacities by Walter A. Kleinschrod, who has served under Mr. Smith as assistant editorial director and as editor of another of the Geyer-McAllister magazines. Mr. Smith's resignation became effective with the completion of this issue.

Robert Smith

Editor since 1952, Mr. Smith—through his articles, editorials, and talks at various conferences and universities—has become widely recognized as a leading authority on automation and other management topics. He led *Office Management* to a position of pre-eminence at a time when the effects of automation were beginning to revolutionize the entire management field.

Walter Kleinschrod

Mr. Kleinschrod, who joined Geyer-McAllister in 1952, served three years as associate editor of *Office Management.* He subsequently was named editor of *The Gift and Art Buyer,* a business magazine covering industrial and merchandising subjects in the fields of home furnishings, decorative accessories, stationery, and gifts. Throughout this period he continued to contribute numerous articles to *Office Management* and to *Geyer's Dealer Topics,* another Geyer-McAllister business magazine serving the office equipment industry. Named assistant editorial director last year, Mr. Kleinschrod has aided in the firm's overall editorial planning, a function over which he now assumes full responsibility.

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WHAT ROLE WILL AUTOMATION PLAY IN YOUR COMPANY'S FUTURE?

ADMINISTRATIVE MANAGEMENT, which pioneered the first reports on Automation in the Office back in 1952, has long since extended its coverage to interpret in depth the role automation is playing in the office, the trends that it has brought about, its implications for every aspect of the office's activities. For definitive reports on what automation means — today and in the future — look to ADMINISTRATIVE MANAGEMENT, the magazine that puts automation in the correct perspective for alert executives. In addition to its articles in depth on every implication of automation, the magazine reports each month the most important installations and latest developments in the field of equipment.

Here are some typical features on automation in recent issues.

Automation revolution will affect every phase of U.S. economy ..... January

As company integration moves forward, sales, transportation, even production, will all be tied together, and the office will run every business activity ..... January

New thin-film computer memories multiply data processing speeds ..... February

Burroughs new solid state B5000 designed for automatic programming ..... March

Two-girl office handles million-dollar business — with automation ..... April

Administrative Management

Formerly OFFICE MANAGEMENT AND AMERICAN BUSINESS

The Magazine of Administration and Systems

A GEYER-McALLISTER PUBLICATION

212 Fifth Avenue, New York 10, N. Y.

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Conference calls computers more important than space

Computer accomplishments will be of ultimately greater significance to civilization than those of space technology or nuclear physics.

This will be the challenge presented to more than 2,500 persons attending the Western Joint Computer Conference in Los Angeles May 9-11 by Dr. Walter F. Bauer, of Thompson Ramo Wooldridge, Inc., and chairman of the conference.

Discussing the conference theme, "Extending Man's Intellect," Dr. Bauer stated, "Indeed it can be said that man's ultimate goal is not to explore the universe, nor to harness unlimited energy, but to build a device equal to or nearly equal to his own mental powers."

Advances in computer technology will have a beneficial effect on the economy through increased productivity, will be of prime importance in cold war strategy, and are fast becoming a symbol of international prestige, he noted.

Technical phases of the conference, to be held at the Ambassador Hotel, will show the progress currently being made and present some of the goals yet to be fully realized. Approximately 70 technical papers by 87 authors will be discussed in 15 sessions.

A sampling of subject titles includes the following: "Micro-System Electronics," "Modeling Human Mental Processes," "Automatic Programming," "Problem Solving and Learning Machines," "Digital Simulation," "Automata Theory and Neural Models," "Pattern Recognition," "Information Retrieval," "Memory Devices," "Computers in Control," "Large-Scale Computers," and "Analog Computer Techniques."

Exhibits of $3 million worth of electronic data processing equipment will be held in conjunction with the conference. Fifty-five firms will be represented in the displays.

Conference speakers include Thomas Watson Jr., president of IBM, who will deliver the keynote address; Dr. Morris Rubinoff, chairman of the National Joint Computer Committee; and Dr. Simon Ramo, executive vice president of Thompson Ramo Wooldridge, Inc.

Office Management and American Business Becomes Administrative Management

This issue marks the last edition of *Office Management and American Business* to be published under that title and the beginning of *Administrative Management*.

Reasons behind the change in title lie in the expansion of functions which are affecting so strongly the place and role of the office manager, according to Donald McAllister, publisher of the magazine.

Office Management and American Business represented the merger of two leading business publications, each of which had absorbed smaller magazines during its career. *Office Management*, founded in 1940, absorbed early in its existence *Business Equipment Topics*, founded in 1905. *American Business*, founded in 1930, absorbed *System* magazine, which was founded in 1900 and is generally regarded as the first general business magazine to be published in this country. When *Office Management* acquired *American Business* last year, the merged publications thus represented the ultimate fusion of four different magazines.

Circulation quadrupled

Office Management itself has had a spectacular growth, reflecting in large part the growing recognition by businessmen here and abroad of the importance of the administrative function. In the space of eight years it has quadrupled its circulation, rising from 10,000 readers in 1953 to its present total of 40,000.

Concurrent with this rise has been the advance in title and rank of the subscribers to the magazine. This advance, matching the steady increase in the responsibilities of these administrators of office functions, was the natural accompaniment to the ever-growing importance of the office in the whole business management picture.

With the new title, *Administrative Management*, the editors feel that the magazine in effect is matching that growth, that advance.

Thus the title-change signals no shift of editorial direction; rather it reflects changes in the very field which it has always been our pleasure to cover.

IS "ATTRITION" THE SOLUTION?

How much validity is there in the controversial Holland report on the effects of automation on employment?

By ROBERT M. SMITH

THE RECENT accomplishment of the Soviets in orbiting a man around the earth illustrates still another aspect of the many economic and human problems created by automation in this country.

Are we lagging behind industrially and scientifically because automation is being applied too slowly? There is good reason to think so.

On the other hand, is the impact of automation compounding our domestic employment problems? Again a good case can be made.

The problem was highlighted when the Defense Department recently reversed plans to order $40,000,000 in electronic equipment to build missiles and war planes. The stated reason: the Department did not want to push automation at too fast a rate at a time when unemployment was still rising.

At the same time, in recent testimony before Congress, Dr. Walter Heller, chairman of the President's Council of Economic Advisors, reported that two-thirds of the nation's productive machinery is obsolete, and it is becoming increasingly apparent that the stiff competition being given this country by Western European producers in world markets is due in great part to the fact that their plants have been rebuilt with the most modern machinery since the war, while ours, "handicapped by peace," have not had to start from scratch with new equipment.

Yet the domestic pressures building up against automation are serious. The recent Holland report, (Rep. Elmer J. Holland, D.-Pa.), which has been so harshly criticized by those who refuse to believe that automation can possibly create any problems, proves on closer analysis to be merely a plea for planning to handle automation wisely, rather than an attack on the concept.

To quote directly from Congressman Holland's report:

"Automation has entered our lives—and it is here to stay.

"It is already remolding our economy as well as many of our institutions, and whole new concepts and systems of management are going to have to be initiated if we are to cope with it.

"The second half of the 20th Century could—through the advances of technology—witness the creation of an economic paradise on earth . . . or, if not handled correctly, we could see the violent end to all civilization because of it.

"With rational planning for a balanced economic and social growth I feel the challenges raised by automation can be met successfully.

Problem: workers not hired

"When new mechanical or electronic devices are installed, assurances are given workers in many industries that they will not be hurt or fired. However, when they leave —due to retirement or resignation— no one is hired to replace them.

"It seems that one of the greatest problems with automation is not the worker who is fired, but the worker who is not hired . . ."

There lies the rub—not only for the factory but for the office as well. It is not the firings that may cause trouble; most companies are all too aware of the dangers implicit in even a few lay-offs in clerical, supervisory, and executive jobs. It is the ambiguous phrase "attrition," used so blithely by so many organizations, that cloaks the real trouble.

"Attrition." In the dictionary, it is defined as:

"1. Act of rubbing together; friction; also, act of wearing down or grinding down by friction. 2. The gradual wearing down, as of resources; as, a war of attrition."

In other words, attrition, in the classic sense, means a wearing away of a certain limited amount of material, or, in military terms, people and material.

But in the economic sense, then, unless there is a war or disaster that wipes out people in a wholesale fashion, there can be no such thing as attrition. The "supply" is not limited; it continually renews itself. Every graduating class at grade school, at high school, at college and university, replenishes it.

And, at the present time, just as automation in both factory and office cuts down on the total number of jobs available, or at least on the rate at which jobs must be increased to compensate for expanding production, the number of people coming into working age each year is increasing at a furious rate. As far as the twenty-year-olds are concerned, we are passing out of the low birth-rate depression years and into the war and post-war years when the birth rate first started booming.

Thus, at a time when available jobs are – in some fields – literally dropping, and in others at least growing at a rate considerably slower than has been true in past periods of prosperity, we have 1,350,000 new job applicants coming into the labor market each year, and will have through the next ten years at least.

Moreover, the ever-lengthening life expectancy is expanding the

potential labor market at the other end as well. The pressures to abandon compulsory retirement at 65 are growing every day, and will inevitably continue to grow as these over 65 become a more and more potent voting group.

Thus, we are faced with a problem which is simple in its elements, but tremendously complicated in its implications: a population, of working age, which is expanding at a much faster rate than available jobs.

This is one face of the problem; the other is that we must automate our work processes as fast as we can to remain competitive, in either the economic or military sense.

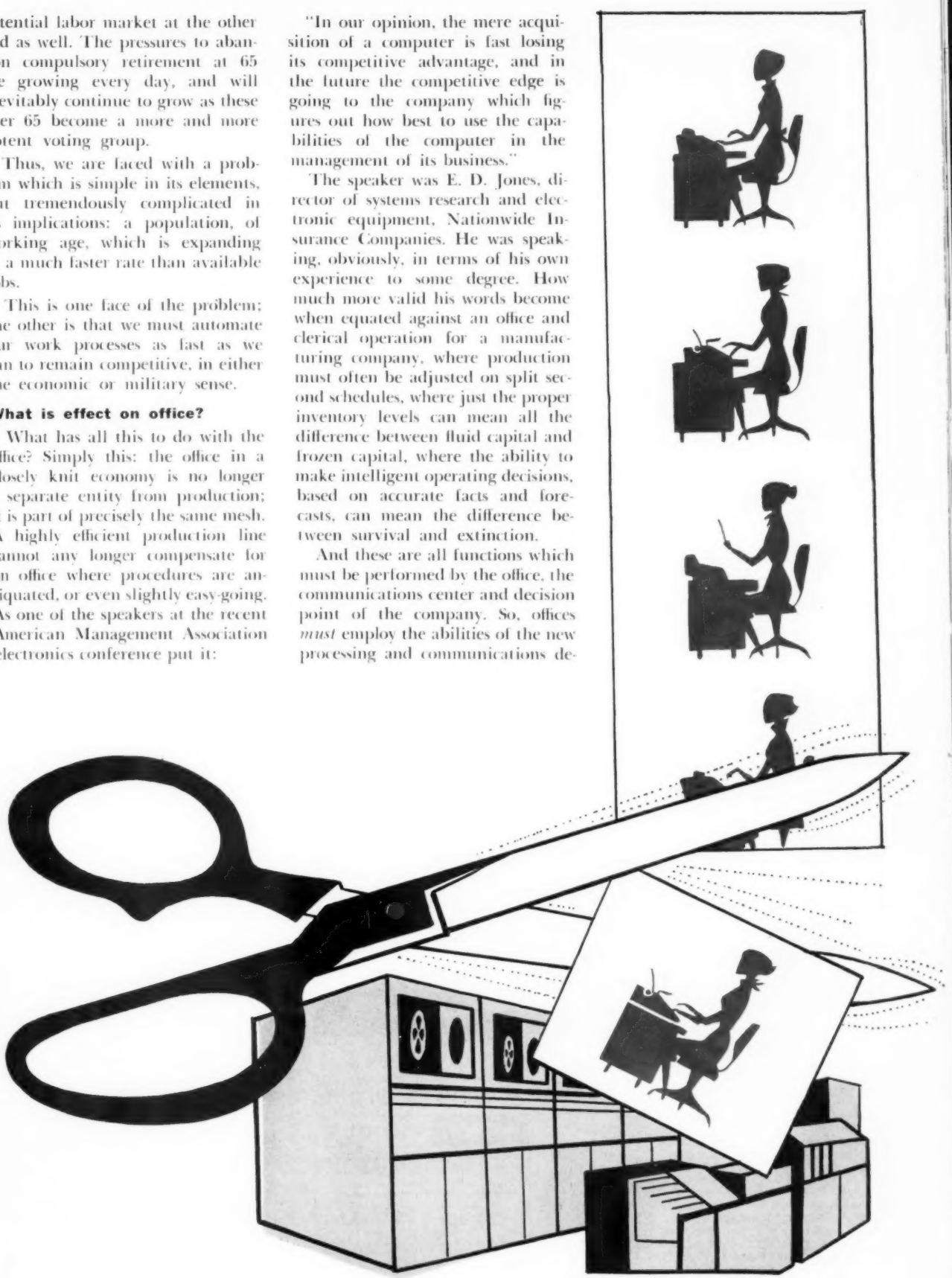
What is effect on office?

What has all this to do with the office? Simply this: the office in a closely knit economy is no longer a separate entity from production; it is part of precisely the same mesh. A highly efficient production line cannot any longer compensate for an office where procedures are antiquated, or even slightly easy-going. As one of the speakers at the recent American Management Association electronics conference put it:

"In our opinion, the mere acquisition of a computer is fast losing its competitive advantage, and in the future the competitive edge is going to the company which figures out how best to use the capabilities of the computer in the management of its business."

The speaker was E. D. Jones, director of systems research and electronic equipment, Nationwide Insurance Companies. He was speaking, obviously, in terms of his own experience to some degree. How much more valid his words become when equated against an office and clerical operation for a manufacturing company, where production must often be adjusted on split second schedules, where just the proper inventory levels can mean all the difference between fluid capital and frozen capital, where the ability to make intelligent operating decisions, based on accurate facts and forecasts, can mean the difference between survival and extinction.

And these are all functions which must be performed by the office, the communications center and decision point of the company. So, offices *must* employ the abilities of the new processing and communications de-



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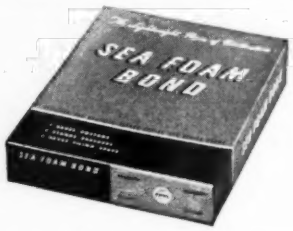

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"Attrition" or jobs?

vices which are being developed at such a dizzying pace.

As a matter of fact, one of the main distinguishing features of automation is its effect of eliminating traditional dividing functional lines between office and factory, sales and research, accounting and inventory control. All information about all functions is drawn toward the central data processing facilities so that all decisions and all actions can be based on as many relevant facts as can be assembled.

But in wiping out traditional distinctions, automation also tends to cancel out the distinctions between workers of various types. Thus the unemployment problems caused by automation in the factory come eventually to the office as well; the unskilled laborer displaced on the production line will have his inevitable counterpart in the low skilled worker in the office.

Unions have already started agitating for a shorter work week as a means of spreading available jobs among the largest possible number of workers. But what may eventually be needed is some sort of distribution system divorced from the normal job-income-purchasing power cycle. The true wealth of a society is measured by the amount of goods it can produce, rather than the amount of money in circulation. Automation, both on the line and in the communications and data processing facilities, which are essential in production and distribution, offers us the opportunity to expand production without expanding the work force in direct ratio. This could lead to tragedy for thousands of individuals under our conventional economic system; it could lead to a life of comfort, ease and relatively little work for the majority of our citizens under a different system.

Perhaps the closest analogy would be a slave society, in which most of the labor is performed by one group, all of the benefits reaped by another. The new machines are in effect mechanical slaves, acting on direction and requiring nothing except shelter and "food"—the power which lets them work.

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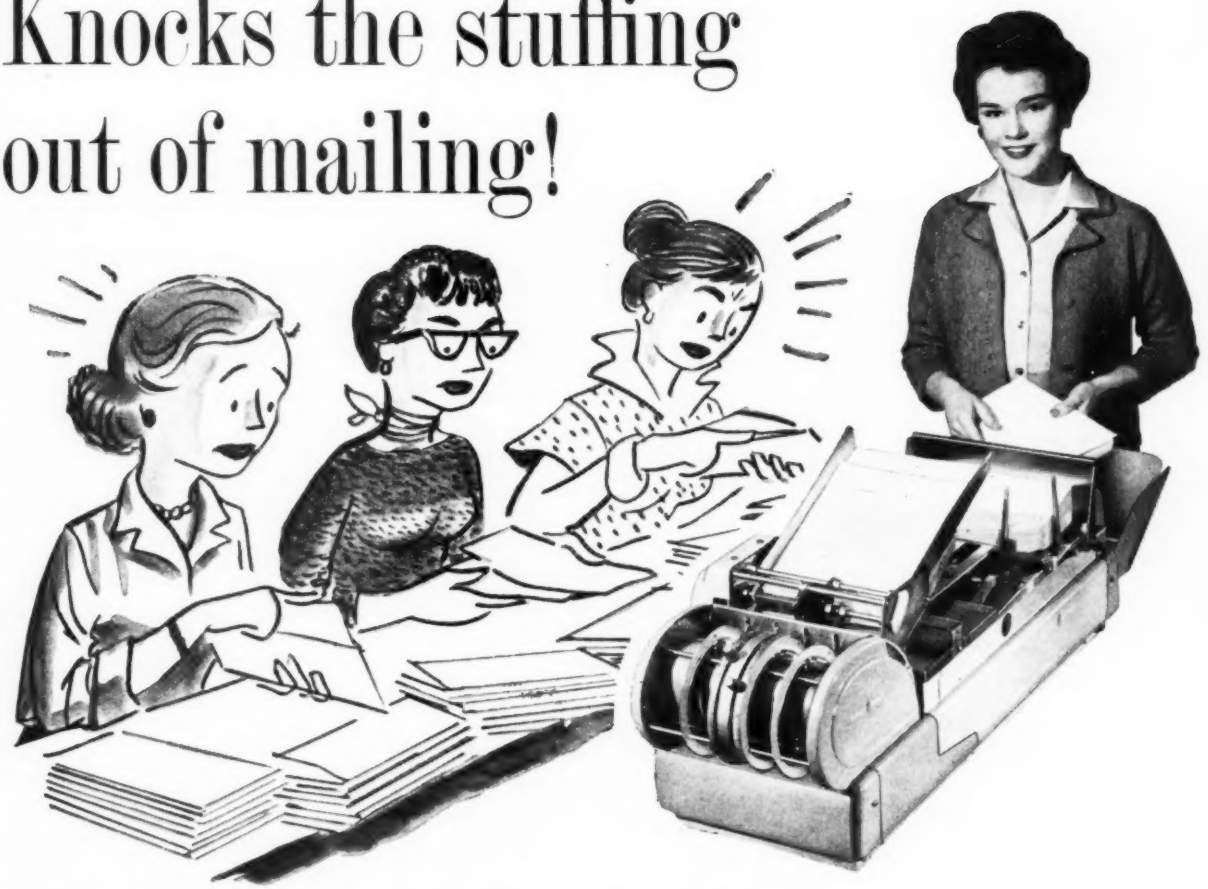

Getting out a mailing around here used to be pure grief! We never could find enough extra people to fold and stuff envelopes. We had to drag in secretaries and use girls from other departments. Handed out a fortune in overtime. Regular work schedules were shot, and morale was a dirty word! Now, nothing to it. One girl handles a mailing—with that little Pitney-Bowes folder and inserter. It's paid for itself many times over.

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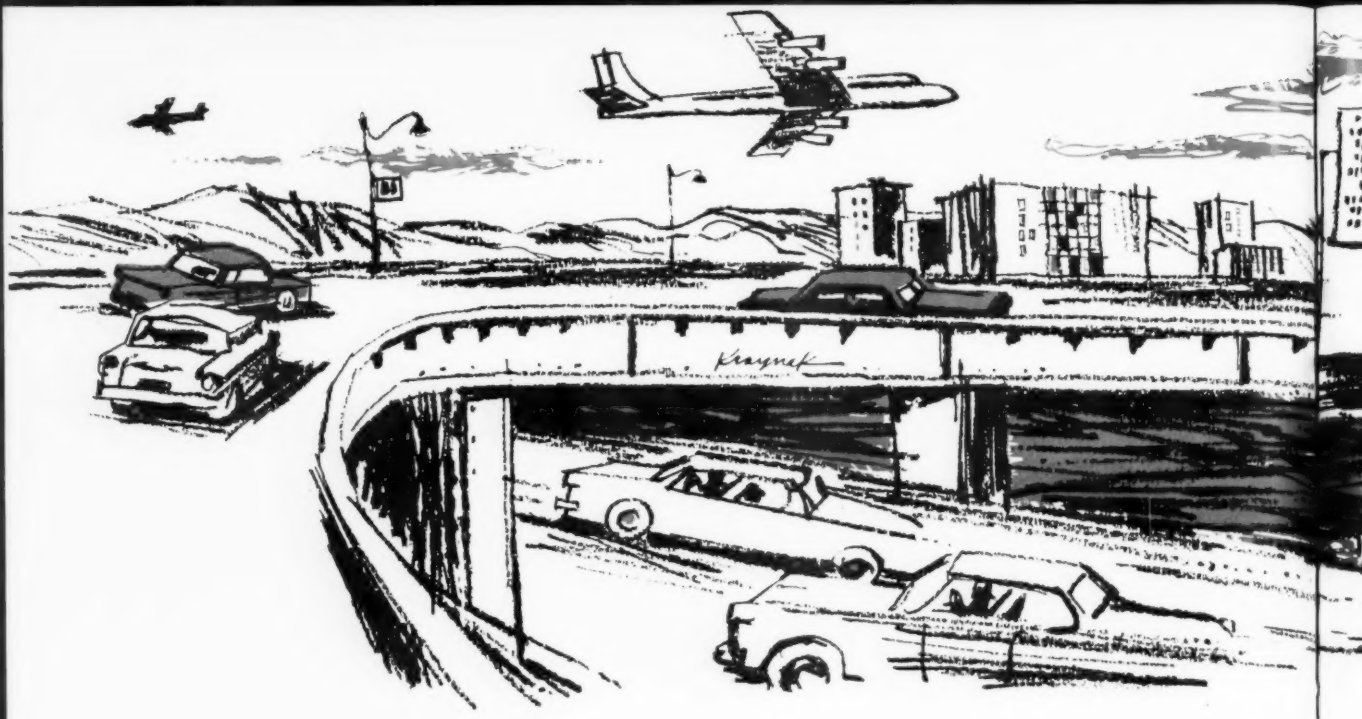


DATA PROCESSING FOR SMALL AND MEDIUM-SIZE BUSINESS . . . No. 7

WHY USE A BOOKKEEPING MACHINE IN THE ERA OF ELECTRONIC COMPUTERS?

By JOHN A. BROWN

WHY USE a bookkeeping machine in this era of electronic computers?

The answer is twofold. A small company will find it hard to buy an electronic computer – even a small one – that may cost more than the net worth of the business. And a large company may find certain recordkeeping functions better suited to bookkeeping machines than to computers, or may find it more practical to do certain basic accounting tasks in the office than to send the work to an outside service center.

Bookkeeping machines have been standard equipment in offices for years and will continue so for many more. They range in price from a few hundred to a few thousand dollars, as compared to computers that cost from $75,000 to over one million dollars. The mechanical capabilities of a bookkeeping machine range from simple ledger posting to complete entries in a group of related records, with proof of accuracy, analysis of entries, and a separate total for each group of figures.

Bookkeeping machines lack the speed and automation of electronic computers, but for many jobs they are adequate and practical. When designed to produce punched tape as a by-product of posting, the bookkeeping machine generates data for subsequent processing at a service center.

Prevailing emphasis on the use of large computers has resulted in the assumption—in some quarters—that bookkeeping machines are relics of a horse and buggy era. This concept does an injustice to a very useful, time tested, and entirely current variety of office equipment. The bookkeeping machine is no more *passe* than the automobile, and is no more displaced by large computers than the family car is displaced by jet airplanes. Each has an important place in contemporary office administration.

Computers and bookkeeping machines are not competitive and never will be. Each fills a completely separate segment in the design of data processing. A multiple-feature bookkeeping machine may provide a comprehensive data processing system within itself, or it can

often be an indispensable tool in pre-computer processing.

The two varieties of business machines are further non-competitive on the basis of cost. Of the 95 per cent of the American businesses whose net worth is less than $125,000, few can consider buying an electronic computer, but many can use the services of a data processing center. Even more can, and do, use bookkeeping machines.

A business that is considering the purchase of a bookkeeping machine should first review its existing office routines and all its major data processing problems. To get the full benefit of a bookkeeping machine three basic areas should be explored:

1. Both the job and the machine should be analyzed to determine which data processing results are required, which routine tasks are possible on the machine, and which jobs can economically be done by machine.

2. The next step is to determine how the machine should be equipped for the job. This is a matter for discussion with the machine salesman.

3. Finally, it should be determined how the job can best be adapted to the machine.

Once these facts are at hand, and the changes in routine are acceptable, the characteristics of the machine can be determined. Often a simple and relatively inexpensive machine is adequate. On the other hand, a machine that can do several tasks simultaneously, thereby saving personnel time and providing prompt, accurate information, may be an investment that quickly pays for itself and opens the way to better business practices.

The least expensive bookkeeping device is a simple posting machine. This type of machine is mainly used for ledger posting, but is also used for other kinds of figure records. These machines add and/or subtract amounts, print a total or balance, and enter the amounts horizontally on the form or record. Some posting machines print code descriptions from code keys on the keyboard; others have typewriter keyboards for any typed descriptions. Some posting machines print no description other than numerals that may be used as codes.

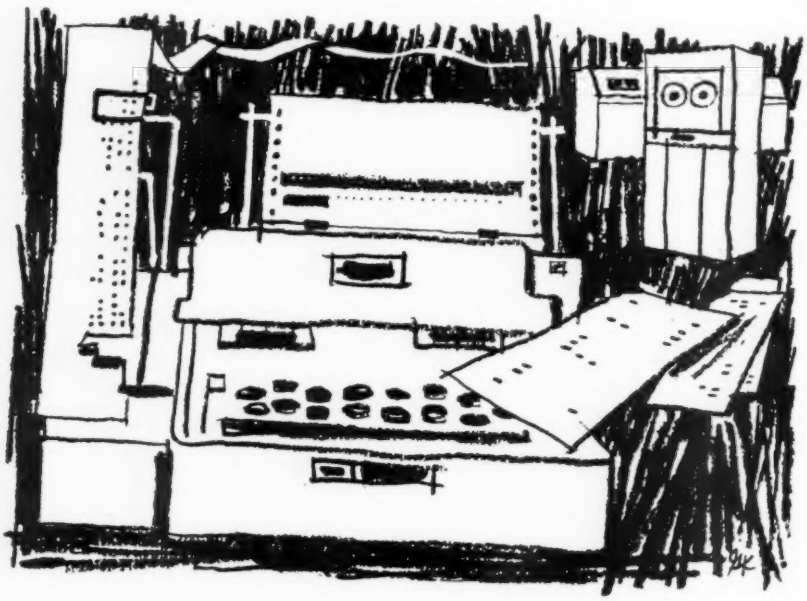
Posting machines are extremely adaptable because of their basic simplicity. They post to ledgers in the most orthodox manner, and they can be used with almost any accounting system.

More elaborate bookkeeping machines are, for the most part, posting machines with features and capabilities for doing additional accounting jobs simultaneously with the basic posting. Most of these machines produce a journal recording of all entries to ledger or other primary records. The journal provides a place for reference to the day's postings and facilitates search for errors when they occur.

Electronics adds "sophistication" to bookkeeping machines

Most bookkeeping machines can simultaneously post to two or more related records. While entries are made to vouchers payable, for example, corresponding entries are posted to inventory records. Payroll checks, earnings records, and a payroll sheet can be completed together.

In addition to posting various related records together, the bookkeeping machine produces an analysis of the entries made, with separate totals for each grouping. For example, a sales analysis can be made at the same time that Accounts Receivable is posted. Sales can be classified by types of goods sold, by salesmen, by areas of sale, or by any other analysis, and the machine can add separate totals for each class of sale. The ability to produce multiple records and multiple totals for analysis is characteristic of a number of highly reliable bookkeeping machines. Surprisingly, many users of bookkeeping machines do not make full use of their machines' ability to provide these up-to-date data that can be extremely valuable to management.



The statistical information obtainable from a multiple-total bookkeeping machine serves a three-fold purpose:

First, it can keep an executive informed of day-to-day activities, enabling him to take advantage of newly appearing opportunities, or to take corrective action where changing trends indicate weakness. It informs a sales executive of geographical areas or salesmen that suddenly need support or direction, of products that should get prompt promotional effort or possibly be changed in character to meet demand. It keeps a financial director informed of growing needs or dangerous trends.

The second use of analysis totals is the obvious one of accounting distribution. When posting is made to Accounts Receivable, the analysis distribution provides credit entries—in total amounts—for appropriate accounts.

The third use of the machine-accumulated totals is to prove posting accuracy and to aid in locating errors. Accuracy and proof are inherent advantages of a bookkeeping machine. It facilitates daily proof and minimizes the month-end closing routine. Month-end statements usually can be provided soon after closing.

Manufacturers of bookkeeping machines have not neglected the opportunities made possible by electronics. Components similar to those used in large computers have been adapted to bookkeeping machines, thus greatly increasing their capabilities. While the cost of the newer and more sophisticated machines is greater than that of purely mechanical models, their increased usefulness often justifies the added cost.

When this electronic circuitry is added to time-proven mechanical design, the result is increased speed and versatility. Ability to multiply electronically (in addition to adding and subtracting) has increased the scope of these machines, particularly for invoicing. Another feature of some new machines is the ability to record data on punched tape. Any information processed in the machine can be recorded on tape—a by-product of posting—for further processing by a computer or tabulating machine. The tape can be sent to a service center, where it automatically produces analysis for management attention. Some of the newer machines can be controlled by pre-arranged programs to get a high degree of automation in their operation.

Electronic multiplication is now available from several manufacturers. The list of new features also includes electronic accumulation of totals, various types of memory units, ability to sense or read recorded amounts and take them into account, automatic line finding, automatic proof of posting to the correct account, and tape recording of data. None of these features were available on bookkeeping machines a few years ago.

Billing machines are now available that can electronically multiply quantities and prices. This eliminates the major job in many offices of a calculator operator who had to compute price extensions and write them down for a billing clerk to type on an invoice. Electronic multiplication not only saves time and clerical expense, but it minimizes human errors.

These new billing machines are extremely efficient. Some are avail-

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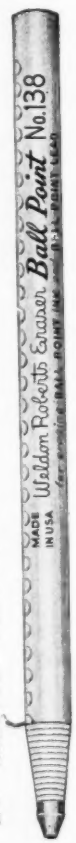
NO. 838 BALL POINT "JET". Exceptional pocket and desk eraser, with famous Weldon Roberts Ball Point green rubber core. In clear plastic holder with pocket clip attached. Holder cap unscrews so eraser core can be moved outward. (No. 8380 Ball Point Jet Eraser has whisk brush attached instead of pocket clip) *Not a mechanical gadget!* Refills, of course.

NO. 38 BALL POINT. Weldon Roberts Ball Point rubber, in attractive green color and handy elliptical shape.



NO. 138
BALL
POINT

Weldon Roberts Erasers
Correct Mistakes in Any Language

(Circle No. 48 on Reader Inquiry Card)

Bookkeeping machines are not passe

able with other features that decrease work time and improve accuracy. For example, automatic form feeding, vertical spacing, and tabulation; accumulation of data on punched tape, and other important features add to their capabilities.

New billing machines also can compute discounts to arrive at the net charge—even if each item on an invoice is computed and printed, and the machine may even produce a separate analysis total of sales for each class of material listed.

The ability to accumulate totals is a function of the memory units built into the machine. In some machines the memory units, or accumulators, are mechanical and are similar to those available on familiar models of bookkeeping machines. On some of the newer machines the memory units are electronic.

Punched tape is promising

These memory units may be used to retain elements of a computation when extending prices, figuring discounts, and arriving at a net invoice total. A memory unit may transfer its total to the computer at the proper stage of a computation, and then receive the resulting figure to hold for later use as called for in the computing program.

In a ledger bookkeeping operation, a whole series of memory units, or accumulators, can provide distribution totals of items posted. Electronic units make possible a greater degree of flexibility and much greater operating speed than is possible with mechanical accumulators.

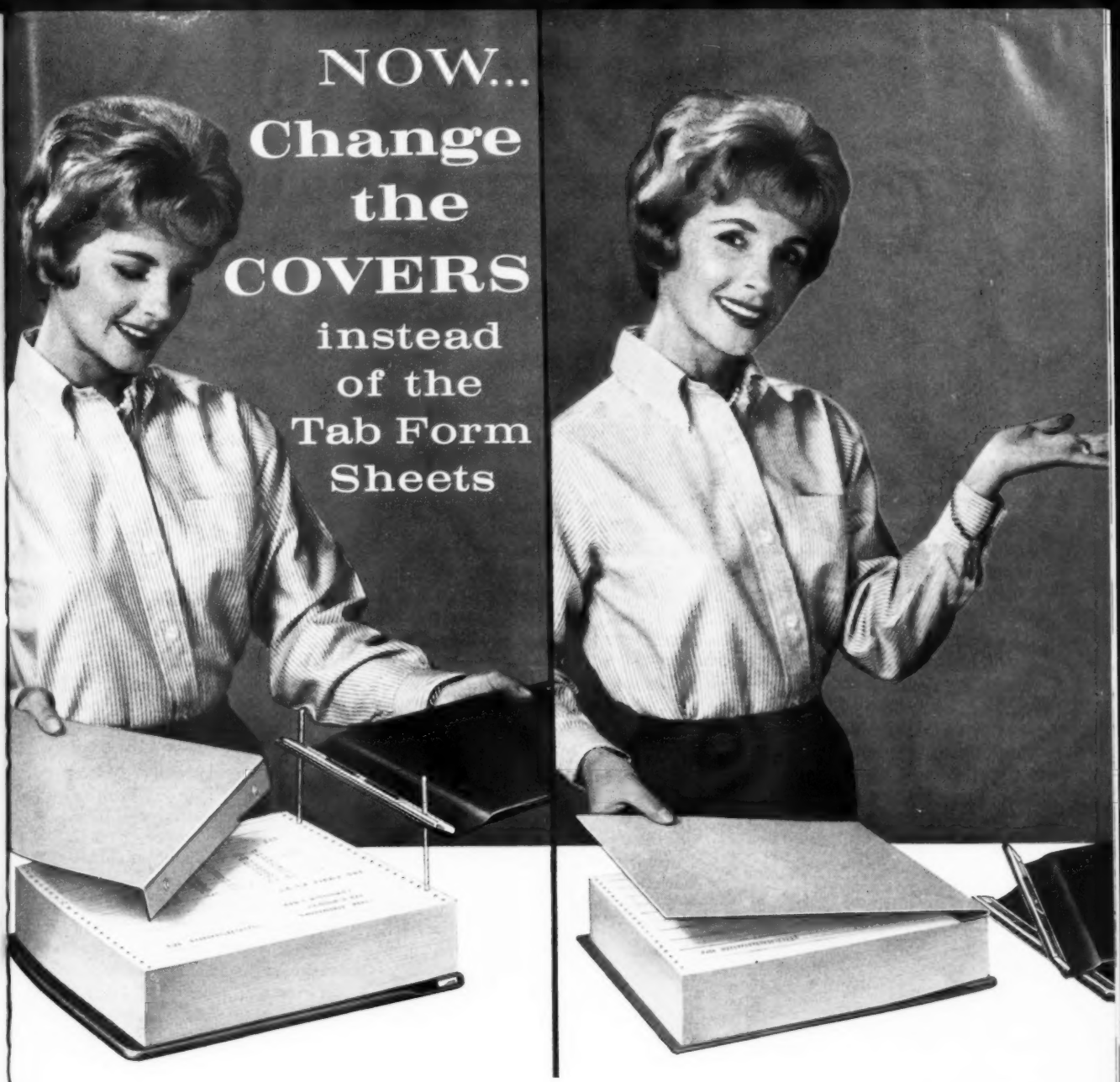
It is often a great advantage to incorporate a means of sales analysis (or an account distribution) as part of an Accounts Receivable posting routine. Besides getting a proof of posting accuracy, the resulting analysis of sales is valuable statistical information for a sales management executive. Also, the accounting department can have a breakdown of totals for credit postings. All this is handled with speed and accuracy on machines equipped with electronic memory units.

Other advantageous features are built into the newer bookkeeping machines. When continuous forms are used, their feeding and alignment can be automatic, thus relieving the operator of tiring and time consuming work. An outstanding new development is the ability of some machines to automatically feed and align a chronological record, such as a ledger sheet, to the exact position for the next line of writing. The operator merely places the sheet in the machine, which automatically carries it to the correct line for posting. This is accomplished by the machine's ability to sense—electronically—the last line of the entry, which causes it to align the form to the next writing line.

Another new feature is an automatic way to prove posting to the right account. To accomplish this, each account is assigned a number appropriately recorded on the ledger sheet. When the sheet is inserted, the machine electronically reads this number. The operator, reading from the posting media, indexes the account number on the keyboard. If the number she enters is the same as the number the machine has read, she can proceed with the entry. If the numbers are not the same, the machine locks, warning that a wrong ledger sheet has been selected.

One of the most promising of the new features is punched tape. Machines equipped to punch tape can record all typed information automatically as a by-product of normal entry. Once the data are punched into tape, they can be used for subsequent processing by automatic machines. All data are punched in a "common language" that can be read by various processing machines. Many firms then simply forward the tape to a service center for this work, thus eliminating the need for an extensive machine and employee function in the office.

Bookkeeping machines are by no means *passe*. They will be needed by many business for a long time to come. For any business that must maintain chronological records, there is no real substitute for the machines' posting procedure.



To transfer active records from the new NBB Cable-Post binder to the NBB storage binder, you just unlock the posts, lift off the vinyl cover and replace with a pressboard cover . . . then turn over the binder and repeat.

This exclusive feature is possible because both the top and bottom covers can be removed . . . no lifting of sheets off the posts. *The result is an important saving in time!*

You save time, too, when loading sheets in the binder...load at the top and remove from the bottom. The flexible nylon cable posts bend without breaking . . . let you open the fully loaded binder flat for easy marginal reading.

Get the vinyl NBB Cable-Post binder (for active records) and the pressboard NBB Cable-Post Jr. (for storing records) at your NBB office supply dealer, or write direct for information on special introductory offer. National Blank Book Company, Dept. 1705, Holyoke, Massachusetts.

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(Circle No. 41 on Reader Inquiry Card)

NOMA CONFERENCE IN ST. LOUIS WILL FEATURE MANAGEMENT "GAME"

42nd International meeting is scheduled for May 7-11

CAMERON HAWLEY will open the 42nd International NOMA conference with trenchant comments on American business during his keynote address at the chapter presidents' dinner.

Following Mr. Hawley's speech will be three days of technical sessions, seminars, management "games," open forums, exhibits of office products, and special features. This annual gathering of the National Office Management Association is scheduled for May 7-10 in St. Louis. Facilities for the conference will be Kiel Auditorium and the Sheraton-Jefferson and Statler Hilton hotels.

CAMERON HAWLEY . . . trenchant comments on U. S. business by author.

A "first" for the NOMA international meeting will be the management "game" to be played at the St. Louis educational center of International Business Machines Corp. Seven teams, each with seven conferees, will match their business acumen in the management decision-making competition. Each team will guide the marketing, production, and financial policies for its "company" in competition with other teams. The business decisions will then be fed into an IBM 650 computer for processing and printed out on an IBM 407 accounting machine. This use of the computer permits several years of simulated business activity to take place in a single day.

Twenty-four technical sessions in the areas of Personnel, Data Processing, Systems and Procedures, Office Services, Accounting, Purchasing, and General Management will be offered at six different time periods. These sessions will run concurrently, and conferees may attend any one of four sessions at a time.

The concurrent sessions are:

MONDAY, MAY 8

"The Psychology of Administrative Leadership," W. H. Higgenbotham, Century Electric Co.

"Procedures Manuals—Guideposts for Efficiency," Miss Lyda E. McHenry, Wayne State Univ.

"Solving Inventory Problems Through Operations Research Techniques," D. B. Hertz, Arthur Anderson & Co.

"The Profit Potential of Work Simplification," H. F. Goodwin, Massachusetts Institute of Technology.

"A Philosophy for Professional Management," C. L. Lapp, Washington University, St. Louis.

"Records Management — What, Where, Why and How," Miss Leta Stroben, Shaw-Walker Co.

"Controlling Hidden Costs of Electronic Data Processing," L. E. Griffith, International Latex Corp.

"Motivate — Don't Manipulate," A. W. Moise, Ralston Purina Co.

TUESDAY, MAY 9

"Preparing Top Management for Data Processing," J. D. Mountain, Mountain Associates.

"Value Purchasing Is Profit Purchasing," W. J. Matthews, Falstaff Brewing Corp.

"The Reynolds Plan for Industrial Security," Paul Hansen, Reynolds Metals Co.

"Techniques for Effective Performance and Appraisal Interviews," E. W. Burr, Monsanto Chemical Co.

"Emerging Policy-Making Opportunities for the Administrative Manager," A. E. Riddle, Colgate-Palmolive Co.

"Office Environment — An Office Production Factor," M. A. Harvey, General Foods Corp.; J. J. Green, The Bendix Corp.

"Organizing for Total Integrated Systems Management," R. D. Pash, Micro Switch Division, Minneapolis-Honeywell Regulator Co.

"Tools for Your Training Program," R. W. Kelley, Kelley, Zahrndt & Kelley, Inc.

NOMA members will match their business acumen in management "game" to be played with IBM computer.

WEDNESDAY, MAY 10

"Cost Control Aspects of Fiscal Planning," S. L. Rogers Jr., U. S. Stove Co.

"Building Maintenance Cost Control Administration," M. F. Riccardi, The Port of New York Authority.

"How to Achieve Maximum Computer Utilization," C. C. Gottlieb, University of Toronto.

"Communication Techniques — The Equipment Horizon," Roy Stone, Communications Engineer.

"Coordinating Management Development," R. W. Barclay, Mead Johnson & Co.

"New Concepts in Reducing Office Administrative Costs," C. H. Miller, H. D. Lee Co.

"Rental vs. Purchase of Data Processing Equipment," W. R. Divine, Southern Railway System.

"Creative Thinking — Ideas for Profit," G. H. True, Visual Research, Inc.

Two all-day seminars are also scheduled for the conference. On Monday, May 8, Frank Knox will conduct the session on "Total Administrative Expense Control." Tom Lawrence will present "Personal Leadership and Motivation" on the following day.

Sixteen open forums will run concurrently on Tuesday afternoon, May 9. The following subjects will be covered:

"Grievance Handling Techniques"; "Office Machine Maintenance Control"; "Office Credit Unions"; "Psychological Testing"; "Employee Attitude Surveys"; "Office Incentive Plans"; "Microfilming As an Office Tool"; "Small Business Administration" (Federal agency); "Recruiting Office Employees"; "Stenographic Pools vs. Decentralized Assignment"; "Magnetic Ink—Aid to Efficiency"; "Mailroom Procedures Can Cost or Save"; "Reading Techniques for the Busy Executive"; "The Fringe Area — Insurance Plans"; "Letter Writing—A Lost Art?" and "Planning for Moving of Office."

Members will tour plant

Social events include the chapter presidents' dinner on Sunday, May 7, at which Mr. Hawley will deliver the keynote address. Mr. Hawley is the author of three best-selling novels on business: "Executive Suite," "Cash McCall," and "The Lincoln Lords." A native of South Dakota and a graduate of South Dakota State College, Mr. Hawley spent 25 years with the Armstrong Cork Co. After several years as director of advertising and promotion, he left Armstrong in 1951 to devote all his time to writing on business.

Other events planned for the conference are the breakfast business meeting on Monday morning, May 8; the annual banquet the following night; and the annual luncheon on Wednesday, May 9. A ladies' program will include tours of St. Louis.

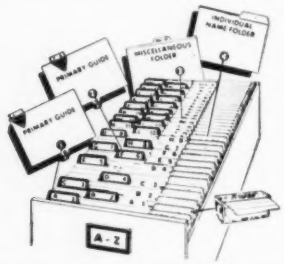
Monday evening, May 8, will feature two special activities. The first is a tour of Monsanto Chemical Co., where NOMA members will see the company's complete facilities. The second is the new series of supervisory problem films developed by NOMA and the McGraw-Hill Co. The films will be shown in the Sheraton-Jefferson Hotel.

Simultaneous with the conference will be an exposition of office equipment and services. Exhibits will cover the entire range of the office —from electronic data processing equipment (Burroughs, Friden,

J. R. TAYLOR . . . Wayne State University Instructor nominated for NOMA presidency.

A Smead FILING SYSTEM ADAPTS TO YOUR NEEDS

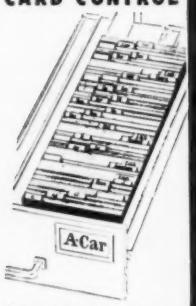
These five basic filing methods easily adapt to the particular needs of your office, are designed to permit fast, efficient filing and finding of your office records.



SMEAD'S TELL-I-VISION SYSTEM

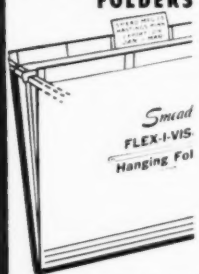
TO FILE YOU SIMPLY DO THIS: 1. Locate the Primary Guide. 2. Find the Individual Name Folder. (For occasional correspondence file in the green miscellaneous folder.) 3. Insert New Correspondence (Latest data always to the front). **And finding is as easy as filing with Smead's Tell-I-Vision System**

CARD CONTROL



Smead's Card Control Filing System . . . for control of card index filing. Small installation expands to meet needs.

HANGING FOLDERS



Smead's Flex-I-Vision Hanging Folder Tab has one inch exposure, folders also ideal for indexing catalogues, swatches, covers, guides, etc.

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(Circle No. 53 on Reader Inquiry Card)

NOMA meets in St. Louis

IBM, Monroe, National Cash Register) to copying and duplicating machines (Apeco, Gestetner, Haloid Xerox, Minnesota Mining, Photostat, Recordak) to furniture (Art Metal, Columbia - Hallowell, General Fireproofing, Globe-Wernicke, Heyer, Jasper Desk) to dictating machines (DeJur-Amsco, Dictaphone, Stenocord) to business magazines (*Administrative Management*)—to name but a few.

The exposition will be held in Kiel Auditorium, and a special preview is scheduled for Monday, May 8, at 3:30 p.m. Exhibits will be open daily from noon to 9 p.m. throughout the conference.

Also on the agenda is the election of new officers. Heading the slate of nominees submitted by NOMA's National Nominating Committee is J. R. Taylor, the committee's choice for international president. Mr. Taylor is now first vice president of NOMA and head of the Department of General Business at Wayne State University, Detroit. Other nominees include W. L. Myers for first vice president, J. Greenwood for vice president, organization relations; J. W. Gawthrop for vice president-treasurer, and K. L. MacMillan for vice president, planning.

Elections also will fill the positions of functional directors for education, personnel, office services, chapter services, and systems and procedures. These national officials will serve one-year terms. In addition, area directors, who serve two-year terms, will be elected for areas 6, 7, 9, 11, 12, 13, 14 and 15. A director for area 5 will be elected to fill the one-year unexpired portion of a two-year term.

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(Circle No. 58 on Reader Inquiry Card)

NEXT MONTH

Administrative Management will begin its extensive coverage of the NOMA convention. In addition to reports on the sessions and speeches, the June issue will contain a special feature on the new role of the office administrator, as uncovered by conversations with NOMA members. More stories and pictures of the convention will be included in the July issue.

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Pick a grade. A color. A finish. A weight. The new Stan-Pak* Run-Rite* line gives you precisely what you need in office-size printing and duplicating papers. And at a sensible range of prices to suit your budget.

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Accurate trim and finish to prevent feeding jams. Even caliper, uniform weight and careful surface sizing to give you sharp, clean ink impressions. You get them all in Stan-Pak Run-Rite Papers—a line that combines the products of our Eastern, Chemical and Missisquoi mills.

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STANDARD PACKAGING CORPORATION
NEW YORK 17, N.Y.

*T. M.

(Circle No. 55 on Reader Inquiry Card)

INDUSTRIAL CONTROL SYSTEM UTILIZES IBM 1620 COMPUTER

INTERNATIONAL Business Machines Corp. recently introduced a multi-purpose industrial control system designed to automate the quality control, industrial process study, and process optimization functions.

The system, the 1710, is used for frequent sampling and interpretation of data in processing and manufacturing industries. It consists of the new 1711 data converter, which translates instrument readings into language understood by a computer, and the IBM 1620 data processing system.

When used as a control system, the 1710 can scan up to 300 instruments at regularly timed intervals and provide instructions for the adjustment of control settings. It can also perform the calculations necessary to build a mathematical model, or description of a process. This is an important preliminary step to the development of the standards and program for the control of a specific industrial operation.

In manufacturing quality control, the 1710 can be used in analysis and recording of the final test of such diverse items as transistors and refrigerators as they come off an assembly line. With the 1710, every unit can be automatically inspected, thus replacing random checks. In addition, the computer evaluates units, or groups of units, and indicates where modification of manufacturing steps may be necessary to eliminate flaws.

According to IBM spokesmen, the 1710 system may be employed in petroleum refining, chemicals, steel, paper, cement, utilities, and many high-volume manufacturing operations. Price tag for the system ranges from $111,000 to $135,000, and monthly rental is from $2,600 to $3,300. Initial deliveries are planned for the fourth quarter of 1961.

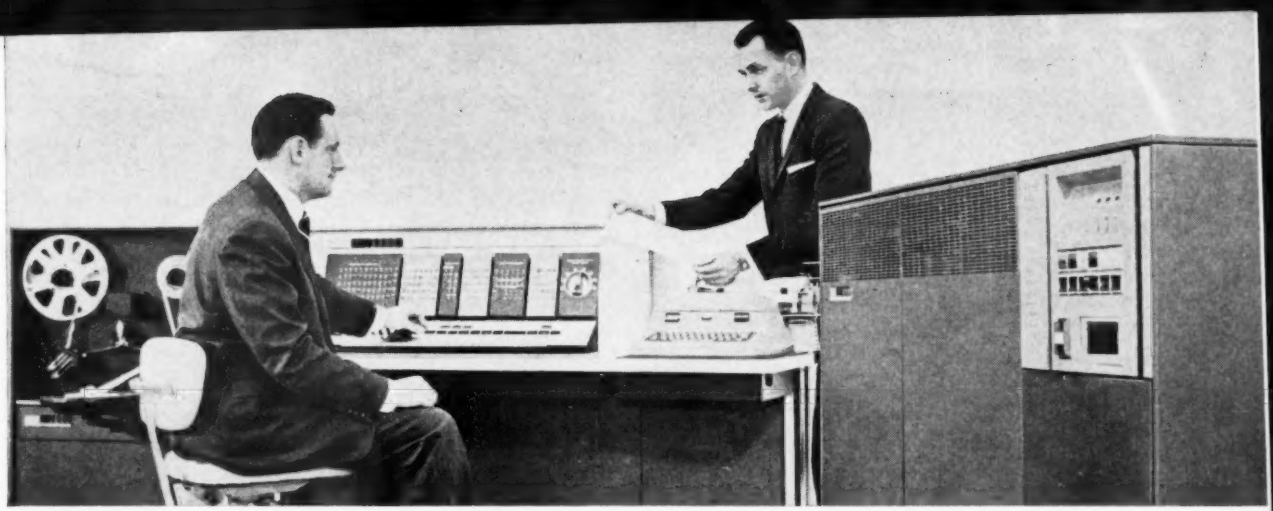
In other news of IBM, the company displayed an experimental scanner designed to read handwritten numbers at the recent Institute of Radio Engineers convention in New York. The machine includes a spinning disc, an array of optical mirrors and lenses, and a photomultiplier tube. Numbers are written within prescribed limitations on a card with pen, ball-point, or pencil.

The cards are then inserted into the machine, where the numbers are analyzed, identified, encoded, and held in a register prior to being punched on an IBM card. The device is strictly a laboratory tool according to O. M. Scott, president of IBM's General Products Division, although it seems to offer possible business applications.

Standard Register Co. shows recording system

A new shop recording system developed by The Standard Register Co., with the introduction of its electro-mechanical Stanrecorder, is aimed at breaking the "input bot-

Employee inserts identification card to trigger Stanrecorder mechanism.



IBM 1710 industrial control system consists of 1620 computer (left) and 1711 data converter, which feeds in data.

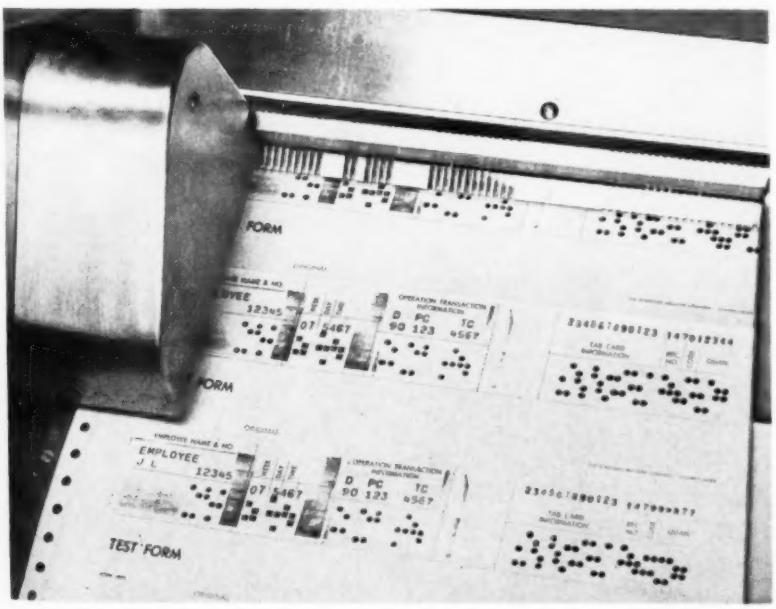
tleneck" in electronic data processing.

The primary objective of the system is to eliminate the need for human intervention—to create a source document that can be "read" and translated directly into machine language. The Stanrecorder is designed to handle this coding job while the Stanomatic Reader-Translator performs the subsequent preparation of the data for high-speed machine processing.

The Stanrecorder units can be located in areas of the plant or office where recordings of transactions must be made. Information is introduced into the unit and hence into the system from five sources: a personal identification embossed plastic plate, a transaction/operation embossed plate, a pre-punched card to designate accountability, the numerical keyboard for variable information, and the time clock mechanism which registers time in hours, tenths of hours, days, and weeks of the year.

Types of transactions that can be handled by the Stanrecorder system range from the simple daily clocking in and out of an employee to the more complicated data requirements of who performed what job where, how long it took, how many pieces were produced, and how many were scrapped. Addition of an optional production counter enables the unit to count and record automatically the number of items produced by a specific production machine.

Standard Register, which introduced the system at the OEMI show in New York, has not announced its price. A pilot installation of the system has been made, but the company has not revealed its location.



Stanomatic Reader-Translator automatically reads data and prints forms.

Digital recording system acquires data unattended

Minneapolis-Honeywell's portable digital recording system is designed for unattended data acquisition over long periods.

The tranistorized unit is called the Type 6150 Incremental Digital Recording System. It acquires asynchronous data by tape stepping methods.

At a nominal stepping speed of 30 steps a second (200 steps per inch of tape), 38 hours of continuous recording are handled with one reel of tape. At lower sampling speeds, the tape supply from one reel often is adequate to permit unattended, automatic operation for a year.

The system can be arranged at the factory to operate with tape widths of one-half, three-fourths, or one inch. It also may be used for monitoring servo lines by incorporating a servo repeater and an encoder in a second housing.

New communications device "talks" with computers

Carrying on a conversation with a complex electronic computer will soon be a simple office routine, thanks to a new device developed

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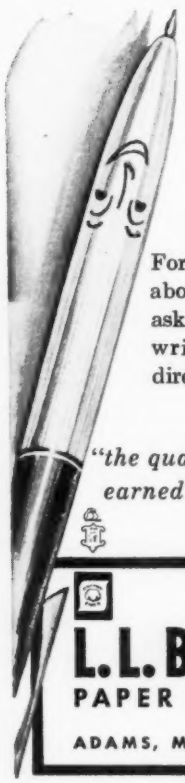

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(Circle No. 12 on Reader Inquiry Card)

AUTOMATION IN THE OFFICE

by Information Products Corp., Cambridge, Mass. The firm's new 2502 Interrogator, which looks like an ordinary electric typewriter with a small viewing screen, can be used by an office clerk to send and receive detailed information from a remotely located computer—all at a rate of 15,800 characters a second.

Designed to automate some of the most basic communications and clerical routines, and capable of being operated by anyone after an hour or two of instruction, the 2502 has applications for such operations as credit checking, insurance investigation, banking, production, and inventory control..

The 2502 Interrogator also functions as a data entry device—which permits keyboard entry with display verification—to a computer for adding to, modifying, or updating stored data.

FileSearch device stores 1,600,000 pages of data

A new machine that can automatically search a 32,000-page file and present desired information in five minutes has been developed by FMA, Inc., El Segundo, Calif. Called FileSearch, the machine combines new advances in optical and electronic techniques and is able to retrieve stored information from microfilmed files at the fastest rate yet known.

Because the system stores 32,000 standard-sized magazine pages on a single reel of microfilm, FileSearch can accommodate over 1,600,000 pages of information—enough to crowd 40 four-drawer file cabinets —in a single file cabinet. When information is desired, the machine automatically searches the microfilm reels at the rate of 6,400 pages a minute and makes copies of requested material. Price of the system is slightly over $100,000.

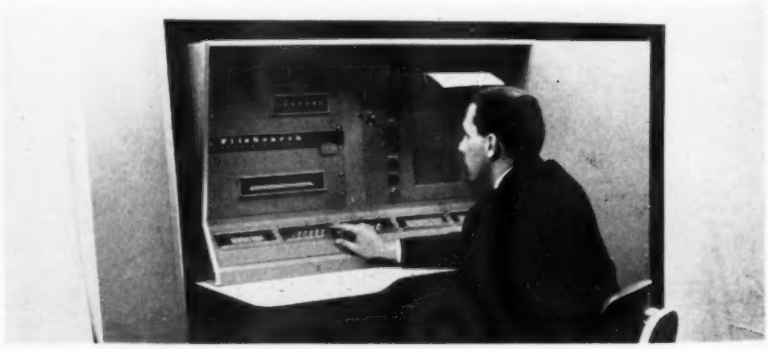
National Cash announces CRAM computer memory

A new type of memory device that enables an electronic computer to look up necessary data in a fraction of a second has been developed by The National Cash Register Co.

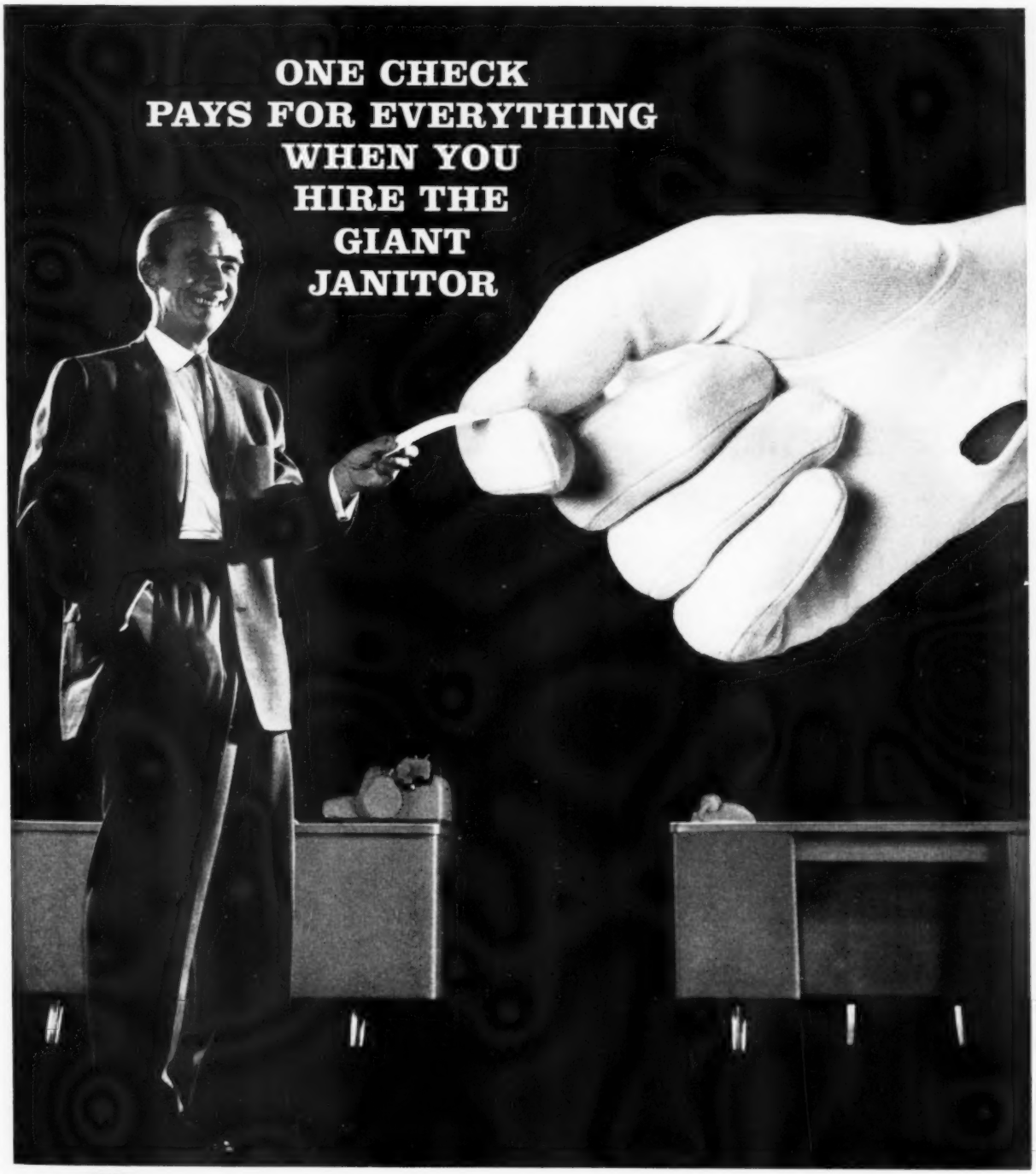
Called Card Random Access Memory (CRAM), the memory file can instantly supply a retail store computer system with up-to-the-minute information on a customer's credit standing and how much he currently owes the store. Used in a bank computer system, it provides such information as the depositor's checking account balance and the status of any loans he might have. The device was developed for use with the NCR 315 computer.

CRAM utilizes a deck of 256 plastic magnetic cards, each of which can store 21,700 letters, or 32,550 digits, of information. As many cartridges as desired can be used wih a single memory unit, and only a few seconds are required to replace one cartridge with another.

The memory unit is priced at $38,000 or can be rented for about $950 a month. It will be available with the first NCR 315 computer systems, scheduled for delivery early next year.



FMA FileSearch is an automated system for information storage and retrieval.



Some of our clients have one-room offices. Others have huge office buildings, factories, big stores.

All have one thing in common: one check per month pays their janitor bill.

We do the hiring, we do the supervising, we buy the supplies. We attend to all of the thousand and one details. You get cleanliness, neatness—and one bill at the end of the month.

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(Circle No. 6 on Reader Inquiry Card)

Conclusion—

AMA URGES CAREFUL STUDY OF COMPUTERS

Speaker warns that decision to automate is like making new product

ONE of the most valuable purposes served by the recent conference on electronic data processing, sponsored by the American Management Association in New York, was that it placed data processing within its proper perspective in the total management information system.

Without this perspective, speakers agreed, effective utilization of the technological improvements in computers is impossible. L. C. Guest Jr., vice president and controller of General Telephone & Electronics Corp., summed up this view: "The decision to install a data processing system in any company should be viewed in the same light as a proposal to manufacture a new product.

"No executive would make the decision to invest substantial sums in a new product purely on the basis of a statement by his manufacturing manager as to the capacity of the manufacturing facility to produce a great number of units per day," he added. "The well-considered decision he finally makes will have been based on an objective analysis of all pertinent factors, their interactions and relationships, and the anticipated potential economic and operational consequences. Yet we blame the failure of the data processing project on the fact that the machines do not have the capacity anticipated, or that they are too elaborate for the job."

To get all the benefits out of data processing, Mr. Guest recom-

Exhibits of data processing equipment for the "total information system" . . .

mended the same kind of objective study followed by the same kind of progress reports used successfully for introducing new products. This means actually reducing the proposals for a data processing program to writing in order to facilitate detailed study. This also means striking the phrase "intangible value" from the lexicon of data processing and systems groups.

Such pre-planning for electronic data processing is aimed at eliminating or minimizing these common ills:

1. Equipment and installation costs often run higher than expected;

2. Computer manufacturers sometimes over-sell the benefits of their systems (particularly the "intangible values");

3. Frequent and expensive breakdowns disrupt the system;

4. Computers may be too large to do the processing job economically or too small to do it at all;

5. The clerical staff is increased because a computer has been added on top of existing operations; and

6. The computer generates more reports and statistics than are necessary, thus burdening the executive whom it is supposed to help with better information.

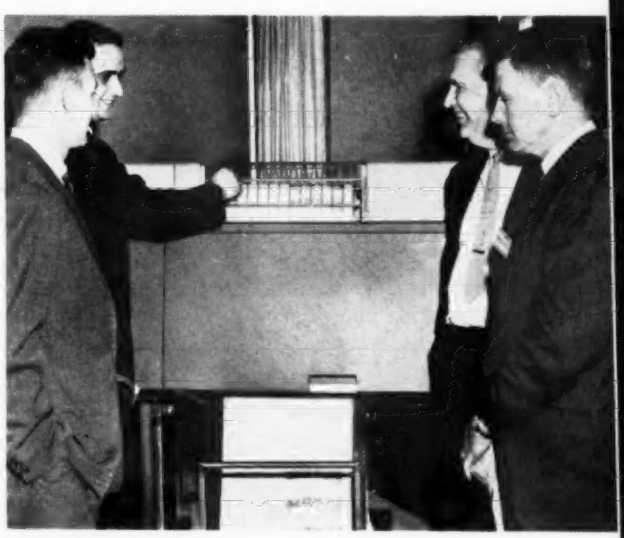
Apply profitability test

"These disappointments in the use of computers for data processing purposes," he noted, "appear to have developed because the businessman has not applied the same profitability standards in these areas as he has applied to other new ventures, nor has he applied the same control procedures or measurements as the projects mature, which would automatically be done in other new product areas."

Mr. Guest noted that the data processing installations that have been successful were profit-oriented from the start. Only projects which could provide tangible savings in investment levels or in costs, or which could produce additional revenues, were approved for the successful installations. To this, he added, "There are so many profitable areas for data processing applications that there should be no reason to maintain unprofitable projects."

The speaker urged that when a company introduces a data processing system it should be placed under the direction of an existing department, such as the controller's office, rather than in a new company unit. However, he concluded that "the real organizational problem in data processing is to bring together all the disciplines – communications, systems and procedures, computer operations–required to develop and implement an integrated information systems program." Such a program should "minimize the time required by operating executives to analyze detail and maximize the return on capital employed in the business by reducing working capital levels, or cutting clerical costs."

But electronic computers do not work in a vacuum, and their utility is limited without supplementary data transmission equipment. So declared Norman J. Ream, director



. . . drew crowds of interested onlookers at the American Management Association's seventh annual Electronics Conference.

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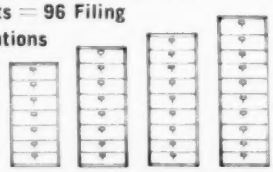

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(Circle No. 64 on Reader Inquiry Card)

Real time for total systems

of systems planning at Lockheed Aircraft Corp. In discussing the future of data transmission as it will affect electronic computing, he predicted the virtual elimination of "batch processing" when data can be transmitted in a steady flow.

This method, known as the "real time" system, is now being developed. Mr. Ream predicted that under this system "information will be transmitted from remote sources periodically, or even continuously, and fed into the central processor, which will process the data and transmit responses that may be an inquiry for additional data, or may give instructions to the original source equipment, or to equipment at still other remote locations for additional information.

"Our goal is improved management intelligence that can be available through the development of better management information systems," he concluded.

The boons offered by real time computer systems were also extolled by Robert E. Fendrich, vice president of the Howard Savings Institution, Newark, N. J. Citing the successful uses of on-line, real time in banking (and particularly at his own banking institution), he told of the following advantages of a "total" system in which input/output devices were located on the production line and at remote warehouses:

"You could tell not only what you needed to produce, but what personnel and facilities were available to produce it, how long it would take you to produce it, and what it would cost, step by step. You would have, at the same time, control over inventory, shipping, production planning, scheduling, and cost accounting." Such capabilities, he suggested, would offer the much-desired management by exception.

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(Circle No. 3 on Reader Inquiry Card)

AMERICAN BUSINESS GAVE $420 MILLION TO CHARITY IN 1960

American businesses contributed $420 million to support national and community non-profit causes in 1960, according to an estimate of the American Association of Fund-Raising Counsel, Inc.

Despite the business recession and profit squeeze which resulted in a 15 per cent decline in corporate net income for 1958-59, company giving declined only 6 per cent, as shown by returns filed by 990,381 companies. These facts about the nation's $8.2 billion philanthropy are contained in Giving-USA, a compilation of information on the subject published annually by the association.

Approximately 49 per cent of all corporate support went to health and welfare causes, 34 per cent to education, and the rest to cultural and business purposes. Corporate gifts accounted for 35 per cent of the total contributions to United Fund and Community Chests. These amounted to $167 million in 1958-1959.

The following analysis of total 1958-59 deductions for contributions was made by type of industry:

Manufacturing	$206,103,000
Finance, insurance, real estate	55,520,000
Transportation, communications, electric, gas, sanitary services	36,910,000
Retail trade	34,651,000
Wholesale trade	28,322,000
Services	12,243,000
Construction	11,854,000
Mining	5,395,000
Agriculture, forestry, fishing	1,441,000

More aid for education

Historically, company giving has been directed toward community health and welfare causes. Today, however, more company giving is being channeled into education.

A 1960 survey by the Council for Financial Aid to Education revealed that 61 large corporations gave a total of $39,989,795 to higher education last year—about 40 per cent of the total of all corporate contributions to education.

Corporate giving is an increasingly important factor in total philanthropy in the United States. The association reported that the direction of corporate funds through business foundations and direct company giving influences others.

The association also noted that corporate giving is becoming an arm of management. Nearly 40 per cent of all companies with 1,000 or more employees support corporate foundations or trusts. These stabilize contributions from year to year since contributions are independent from corporate earnings.

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NEW SYSTEMS AND EQUIPMENT

For more information circle numbers on reader service card.

◀ Postage meter

The Model 5400 postage meter stamps any denomination of postage from a half-cent up to $9.99½ in a single meter stamp and stacks mail in one operation. The date can be changed by turning a dial. The machine also issues a meter stamp on wet or dry gummed tape for parcel post and bulky mailing pieces. The stacker holds up to 40 letters. Pitney-Bowes, Inc., 2969 Walnut St., Stamford, Conn.

Circle N-1 on Reader Service Card

Armchair ▶

Sculptured unit-arm frame and elliptical back spindles characterize this modern Danish hardwood chair. Wood finish is chestnut, walnut, or spice brown with cushions in a variety of fabrics and colors. Baumritter Corp., 145 E. 32nd St., New York 16.

Circle N-2 on Reader Service Card

▲ Projection printer

The Projecto-Printer 40 can produce transparencies up to 9½ by 12½ inches in size for overhead projection from illustrations, bound books, or material printed on both sides. The Projecto-Printer 40 uses two processes of reproduction: a dry developing diazo method makes a transparency on Projecto-Viewfoil from a translucent or transparent master; the reflex photocopy method makes a transparency on clear Transferon film from any original in seconds. Developing chemicals are contained in a plastic bag. Ozalid Div., General Aniline and Film Corp., 68 Corliss Lane, Johnson City, New York.

Circle N-4 on Reader Service Card

◀ Index tabs

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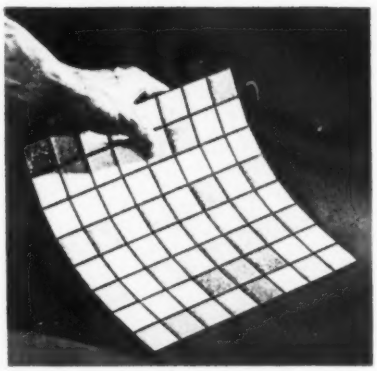

◀ Ceramic tile

Ceramic mosaic tiles, one-inch-square in size, are fused into a rubber grid 9 inches square to form Ceramaflex, an easy-to-maintain floor covering. The ceramic surface and the rubber grout joints are said to be highly resistant to alkalis, greases and oils, and require only occasional damp mopping. Although resilient underfoot, the hard surface resists indentation. Ceramaflex Div., United States Ceramic Tile Co., 217 4th St., N.E., Canton 2, Ohio.

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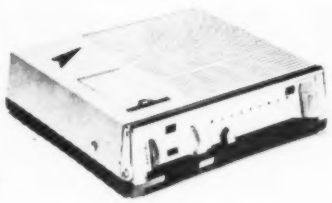

◀ Portable dictating unit

Microphone, battery, charger, and carry handle are contained within the metal case of the Stenocord "Explorer" portable dictating machine; the microphone recedes upon its cord into the machine. The "Explorer," has a nickel-cadmium battery; uses a magnetic belt recording medium that is compatible with the Stenocord 400D desk model dictating machine. Stenocord of America, Inc., 37-20 48th St., Long Island City 1, N. Y.

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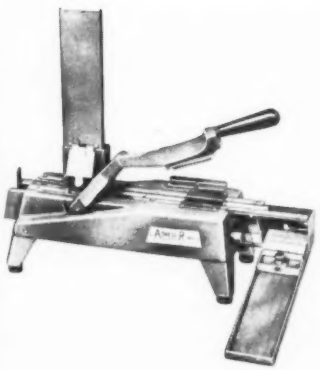

◀ Addressing machine

The model 600 Address-R metal plate addressing machine has a 150-plate capacity magazine with semi-automatic loading and unloading. A feather-touch stamping arm is said to lighten machine action and operator fatigue. Nettle Mfg. Co., 27 Huntington Ave., Boston 16, Mass.

Circle N-8 on Reader Service Card

▲ Paper jogger

Full reams of legal and letter-size papers can be properly conditioned by the model 665-AC Lectro-jog paper jogger. Operating from 110-volt AC power, the adjustable jogger can also be used for eliminating lint before running paper through a duplicator. The Purnyea Manufacturing Co., 4482 Lindell, St. Louis.

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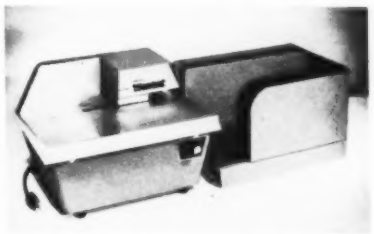


▲ Envelope opener

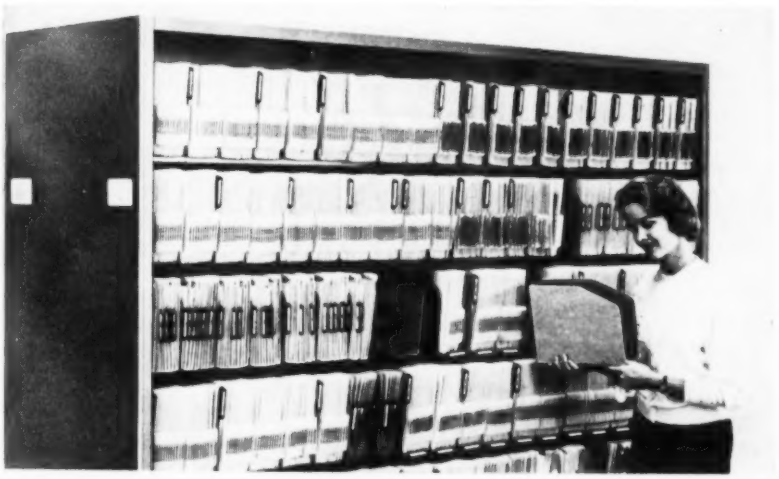
The "Wombat" electric envelope opener can open 300-400 envelopes per minute. Cutting heads on the 9 by 12-inch unit are fully enclosed for safe operation. The Redman Co., 6028 N. Cicero Ave., Chicago 46.

Circle N-9 on Reader Service Card

Open-shelf filing system ▶

Basic element of the "Unit Spacefinder" filing system is the unit box, a self-contained laminated fiberboard box four inches wide, in letter or legal size. The box is equipped with a steel back that slides on cross-rails in the free-standing metal frame. Boxes may be removed and distributed with the aid of a specially constructed truck. Accessories include a series of guides and folders. Tab Products Co., 995 Market St., San Francisco.

Circle N-10 on Reader Service Card



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(Circle No. 10 on Reader Inquiry Card)

Tips for the Office

12 tips for collecting bills

The following 12 suggestions for collecting past-due accounts were developed by Illinois Bell Telephone Co., as quoted by the Dartnell Corp.

1. Decide the best time to start telephoning. Should it be at the very beginning or after several collection notices have been sent?
2. Have all the facts about the customer. How long has he been a customer, how much has he bought from you, how much does he owe, and what is his past credit history?
3. Be sure to talk with the right person. He is the one who has the authority and can do something about the payment.
4. Be tactful. Find out if the customer has any valid reason for delayed payment.
5. Work out a definite payment plan that will include asking the customer what payment arrangements will be possible for him to meet.
6. When you identify yourself and your company, you will make a good impression if you call the customer by name.
7. Then pause. He has probably received your collection reminders, and he will know why you are calling. Take a few moments to find out what he has to say.
8. State the facts. Explain how long the invoice has been past due.
9. Again give him a chance to volunteer his reasons for not paying.
10. Adjust any legitimate complaints.
11. Get the arrangement about making payment. Make it specific and definite.
12. Thank the customer for the anticipated payment.

Changes cost money

According to Leslie Matthies of the Ross-Martin Co., three types of costs may be incurred due to change:

1. You can lose production.
2. Supervisors may have to spend more time on training employees.
3. You may have to buy new equipment or supplies.

Modernize the office layout

Four basic rules for modernizing the office layout, taken from Smith-Corona's booklet "Guide to Increasing Office Efficiency," seem so logical that every office administrator should know them. But look around to see how often they are violated.

1. Wherever possible, a work path should be a straight line without zig-zagging, criss-crossing traffic.
2. Put your filing cabinets and all other office equipment as close as possible to the people who use them most.
3. Apply the same rule person-to-person. If Miss A and Miss B, for example, must have frequent contact during the course of the work-day, by all means see to it that their desks are situated close to each other.
4. A piece of furniture (no matter how decorative) or office equipment (no matter how useful) so situated that your people must walk around it, should be moved at once. It is a "time catcher" if it causes any-

one even a few unnecessary steps. Multiply these steps by days and weeks and you can see the need for applying rule No. 2 immediately.

"Soft boiled" executives

"Soft boiled" executives, according to Industrial Relations News (IRN), operate under the commonly held, but incorrect, notion that "a happy employee is the most productive employee."

Productivity may be increased through personal persuasion or competitive stimuli that may cause anxiety on the part of employees, says the newsletter. "What's more, this anxiety may not be relieved by efforts to make employees happy."

IRN reports "a growing realization in the corporate community that human relations is not a synonym for high morale."

Professor Chris Argyris of Yale University's Department of Industrial Administration, says the goal of a human relations program is to develop employees who are functioning to full capacity, are internally committed to their work, and who have a deep sense of responsibility toward the company.

There are many ways to achieve this goal, IRN says, "and sometimes the method requires forceful action that could create a degree of initial resentment on the part of employees."

The newsletter criticizes executives who operate on the theory that good human relations requires "handling employees with kid gloves." These executives are "doing their company a disservice."

One personnel vice president says flatly, "Human relations does not mean mollycoddling, paternalism, or universal happiness." However, he adds, it does require the executive to understand human behavior and human motivation to provide the leadership needed to achieve the aims of the business enterprise.

The "go easy" approach is used by what the newsletter calls the "soft boiled" executive.

Subordinates of the soft boiled executive miss firm direction and "tend to feel leaderless." Furthermore, "the climate developing from this approach enables misunderstanding to ripen."

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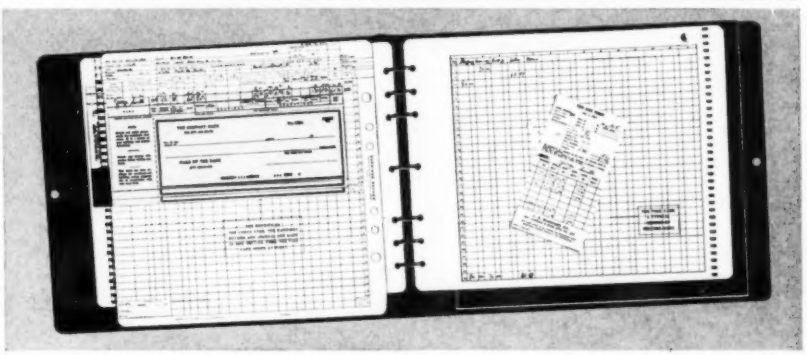

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BOOKS

MEN, MONEY AND MOTIVATION, *by Arch Patton, McGraw-Hill Book Co., Inc., 330 W. 42nd St., New York 36, 233 pp., $7.50.* "Executive Compensation as an Instrument of Leadership," is the precise subtitle of this thorough and engaging book. Starting with an explanation of the evolution of compensation administration, the author successfully illuminates the value of corporate compensation structures on the individual executive and on the critical areas of the corporate environment. What is an executive worth? How effective are the various incentive plans? How should the compensation structure be priced? These are but a few of the practical questions for which Mr. Patton suggests ample solutions.

MODERN PRODUCTION MANAGEMENT, *by Elwood S. Buffa, John Wiley & Sons, Inc., 440 Park Ave., S., New York, 636 pp., $10.25.* After an introduction in which the relationship between management and the production function is clearly drawn, the author discusses, in detailed chapters, "Analytical Methods in Production Management," (Part II). It is on this analytical grounding, he states, that broad problem areas of system design, (part III,) and operation and control (part IV), can be effectively discussed. "Production really deals with the 'operations' phase of any activity," Mr. Buffa says, "regardless of its setting." The general principles outlined in this book might be applied in retail store operations as well as office administration.

PROGRESS IN OPERATIONS RESEARCH, Vol 1, *edited by Russell L. Ackoff, John Wiley & Sons, Inc., 440 Park Ave. South, N. Y., 505 pp., $11.50.* This is the first in a series of volumes designed to review mathematical techniques and research methods available to operations researchers. The book emphasizes technical progress in the following areas of operations research: Inventory Theory, Linear Programming, Dynamic Programming, Queuing Theory, Sequencing Theory, Replacement Theory, Simulation, and Gaming.

PROCUREMENT, The Modern Science of Purchasing, *by Henry G. Hodges, Harper & Brothers, 49 E. 33rd St., New York, 405 pp., $7.50.* This handbook systematically analyzes methods of departmental operation, quality control, value analysis, negotiation, and record-keeping, for ways by which profits could be improved through increased effectiveness. A chapter entitled, "Buying New Major Equipment," outlines important factors such as flexibility, space requirements, labor costs, and overhead, as a guide post for better procurement. Among the many subjects covered are: Buying Used Equipment and Leasing; Storeskeeping; Reciprocal Buying; Price Determination; and The Budget.

MANAGERIAL AND INDUSTRIAL ECONOMICS, *by John A. Shubin, The Ronald Press Co., 15 E. 26th St., New York, 518 pp., $7.50.* Written from the point of view of the executive manager, this book presents, "a comprehensive approach for conducting an economic analysis of an industry and a firm," according to the author. The economic concept and analytic tools used in solving industrial problems and for making long-range investment programs and policies are used throughout. The analytical framework for analysis and decision-making is formulated by the author as: the structural design of the industry and the firm; the environmental impacts on business enterprise; projected economic and business trends; and managerial goals and motivations.

INDUSTRIAL PURCHASING, Buying for Industry and Budgetary Institutions, *by J. H. Westing and I. V. Fine, second edition, John Wiley & Sons, Inc., 440 Park Ave., S., New York, 534 pp., $9.50.* This expanded edition places emphasis on purchasing policies and presents up-to-date information on such subjects as: the materials management concept of organization; coping with the rising cost of transportation; value analysis; quality and quantity control procedures; anti-trust laws and administered pricing. Each chapter contains two case studies of purchasing problems.

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Atlanta 2....J. R. Erikson Co., Inc., 364 Nelson St., S.W. Attn: Mr. J. M. Coffee

ILLINOIS
Chicago 6.....A. Hoenigsberger, 123 North Wacker Drive Attn: Mr. H. L. Hoenigsberger

KENTUCKY
Louisville 2..Herman A. Schildt Co., 323 East Market St. Attn: Mr. F. J. Berning

LOUISIANA
Baton Rouge 9....Tupper Supply, Inc., 2117 North Street Attn: Mr. Howard Billings

MARYLAND
Baltimore 11..C. E. Briddell Co., Inc., 2800 Hampden Ave. Attn: Mr. H. W. Beckman

MICHIGAN
Detroit 8.....Foam Rubber Products 5301 Grand River Avenue Attn: Mr. Sy Lichter
Grand Rapids 3.....Upholstery Supply Co. of G. R. 325 Fuller Avenue, N.E. Attn: Mr. Arnold Bjork

MINNESOTA
Minneapolis..New York Fabrics, Inc., 2938 Nicollet Ave. Attn: Mr. H. Becker

MISSISSIPPI
Jackson.....Woolley Brothers, 924 Palmyra Street Attn: Mr. R. E. Woolley

MISSOURI
St. Louis 8.....Hinsman Co., 4507 Olive St.

NEW JERSEY
Union.....Krupnick Brothers, Inc., 909 Rahway Avenue

NEW YORK
Kingston.....Vinyl Leather Co., 34 Ferry Street Attn: Mr. A. J. P. Seitz
New York 1..Fabric Leather Corp., 16 West 32nd Street Attn: Mr. W. Wilson
Rochester 14.....H. R. Howard & Sons, Inc. 60 North Washington St. Attn: Mr. W. S. Howard

NORTH CAROLINA
High Point.....American Supply Co. of N. C., Inc. 308 West Broad Street Attn: Mr. Dewey Smith

OHIO
Akron.....John Showalter Co., P.O. Box 968
Cincinnati.....King Bag Company, 127 East Front Street Attn: Mr. Walter King
Cleveland 13.....Earl K. Koch & Son 2100 West Superior Viaduct Attn: Mr. Earl Koch

OKLAHOMA
Tulsa 8.....Oklahoma Upholstery Supply Whittier Station, P.O. Box #3185 Attn: Mr. F. W. Graff

OREGON
Portland 14.....McDonald & Co., Inc. 930 South East Oak Street Attn: Mr. James D. Roddy

PENNSYLVANIA
Philadelphia 6.....Maen Line Majestic Fabrics 217 Chestnut Street Attn: Mr. Maurice G. Maen
Pittsburgh 22.....J. J. Peiger Co., 101-103 Market Street Attn: Mr. J. Williams
Wilkes-Barre.....The Smith Co., Inc., 568 Hazle Street Attn: Mr. Harold Smith

RHODE ISLAND
Providence 3....Providence Textile Co., 243 North Main Attn: Mr. Harlan Espo

TENNESSEE
Memphis 2.....Southern Textile & Supply Co. 894 Eastmoreland Avenue Attn: Mr. J. T. Hogan

TEXAS
Dallas 26.....A. F. Schmalzried & Co., 2650 Main Street Attn: Mr. Chas. W. Schmalzried
Fort Worth..Reese B. Davis & Co., 316-20 South Lake St. Attn: Mr. Reese B. Davis
Houston....A. F. Schmalzried & Co., 1930 Oakdale Street

WASHINGTON
Seattle.....McDonald & Co., Inc., 414 Boren North Attn: Mr. Leonard McDonald

WISCONSIN
Milwaukee 2.....Gebhardt, Inc., 213 North Broadway Attn: Mr. C. Pushkash

DUPONT
REG. U. S. PAT. OFF.
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(Circle No. 18 on Reader Inquiry Card)

Looks like fine old tapestry . . . yet the softly muted beauty of this "Fabrilite"* vinyl upholstery lasts for years. Picture it gracing an elaborate lobby, a successful office. This rich, embossed, breathable texture was selected by a special consumer survey. The colors? Straight from the imagination of Dorothy Liebes.

THIS IS FLANDERS... NEWS IN DU PONT VINYL UPHOLSTERY

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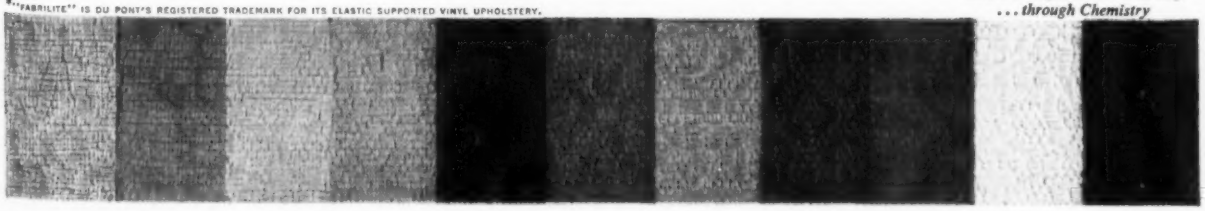


(Circle No. 18 on Reader Inquiry Card)

OFFICE OF THE YEAR AWARD

▲ *Union Carbide Corporation, New York, New York. GF 1000 Series Desks, 1000 Series Consoles and GF Filing Cabinets.*

▼ *Atlantic City Electric Company, Atlantic City, New Jersey. GF 1000 Series Desks, Goodform 300 Chairs, GF Institutional Tables and GF Stacking Chairs.*

GEYER'S OFFICE INSTALLATION AWARD

FOR THE SECOND STRAIGHT YEAR

GF FURNISHED OFFICES WIN THE TWO TOP "OFFICE OF THE YEAR" AWARDS

Again in 1960, GF-furnished offices won the two top "Office of the Year" honors. These awards are made annually by the magazine ADMINISTRATIVE MANAGEMENT formerly OFFICE MANAGEMENT AND AMERICAN BUSINESS with the cooperation of members of the American Institute of Architects and the Association of Consulting and Management Engineers.

1. "Office of the Year" Award
First Place, for offices of 300 or more employees
won by **Union Carbide Corporation,** New York, N. Y.

2. "Office of the Year" Award
First Place, for offices of up to 300 employees
won by **Atlantic City Electric Company,**
Atlantic City, New Jersey

In 1959, these two awards were won by the Southland Life Insurance Company, Dallas, and Louisiana Companies, Baton Rouge. Both buildings were furnished with General Fireproofing business furniture.

Charney's, GF's Atlantic City dealer, won the first place Silver plaque in Geyer's Office Installation Award for 1960. This, too, was for the GF installation at Atlantic City Electric Company – the first time that one installation has been honored as both "Office of the Year" and "Best Dealer Installation".

In furnishing new or remodeled offices, in adding to or replacing existing equipment, talk to your nearby GF branch or dealer for helpful information and planning service. Or, write: Dept. AM-11, The General Fireproofing Company, Youngstown 1, Ohio.

GF
BUSINESS FURNITURE

(Circle No. 24 on Reader Inquiry Card)

"OFFICE OF THE YEAR" WINNERS, 1960

Six office structures, considered by the editors of Administrative Management *to be the best built during 1960, are illustrated and described on the following pages. These six buildings — from New York's Union Carbide building, which houses 4,000 employees, to Parke, Davis' administrative offices in Ann Arbor, Mich., where 75 clerical employees work—typify American office architecture and design of the Sixties.*

By JOHN ALLAN RHEA

Union Carbide Corp.

New York, N. Y.

Office of the Year Award

(for offices designed for 300 or more employees.)

52-story Union Carbide building is brightest object on Manhattan skyline.

The building seems to "float" above its pink terrazzo plaza.

AFTER DARK, the brightest object on the Manhattan skyline is the 52-story Union Carbide building. Lights gleam into the night from behind the 53 per cent glass curtain facade of the tallest building on New York's Park Avenue.

Union Carbide has a reason for leaving the lights on at night. New Yorkers have grown blase about the glittering office structures rising above Park Avenue, and the tower of light has substantial public relations value.

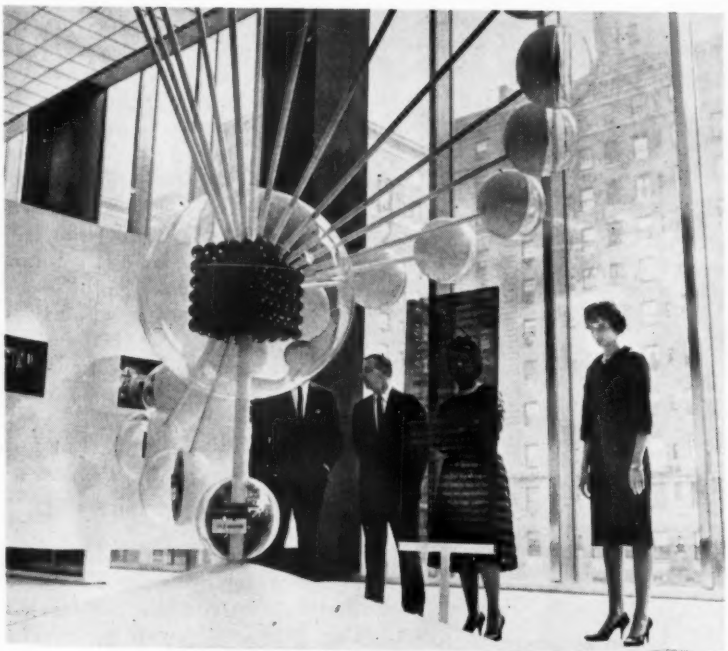
Yet, on a street where luxurious office buildings have become commonplace, Union Carbide more than holds its own. By day, its stainless steel exterior sparkles in the sunlight. Its free-standing form creates the illusion that the building "floats" above its pink terrazzo plaza.

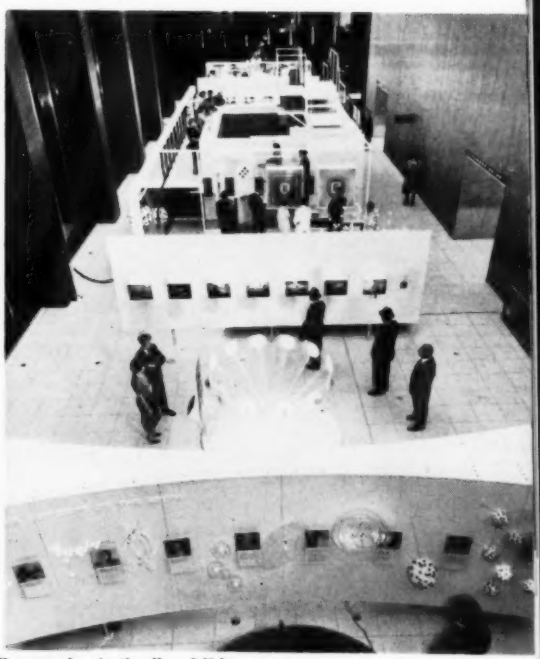
With one and one-half million square feet of gross space, Union Carbide's building is one of the largest office structures in New York. Four thousand company employees, plus an additional thousand employees of tenant companies, work in the building.

Of special interest are the building's ceilings, walls and floors. Luminous ceilings provide a minimum of 55 footcandles of shadow-free light; diffusers made of the company's Bakelite vinyl plastic conceal the air conditioning ducts. Ceiling modules of five by two and a half feet permit complete flexibility.

The building is New York's first to use movable interior walls exclusively. These walls consist of more than 20 miles of movable partitions. Floors are covered with some 15 acres of carpeting made of

Typical executive office indicates wide use of stainless steel, a product made from Union Carbide raw materials.

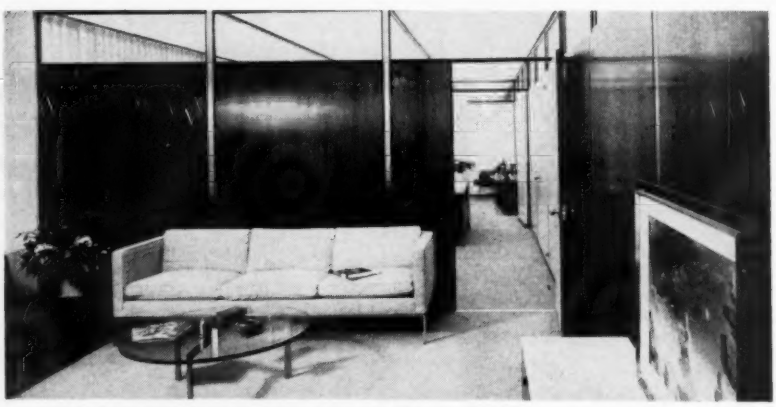




Display of radioactive isotopes (left) is part of "Atomic Energy in Action" exhibit.

Horizontal conveying system facilitates handling of sales orders.

Union Carbide auditorium is used for sales training, press conferences, tours.



Wide variety of plants and art objects enliven reception areas.

Union Carbide Corp.

Union Carbide's Dynel fabric. (This is estimated to be the world's largest carpeting installation).

Actually, the Union Carbide building is two connected buildings—the tower section on Park Avenue, which rises to 707 feet, and a 12-story building on the Madison Avenue side. In the smaller building are the street-level shops, 1,300-seat cafeteria, medical section, employee lounge, library, communications center, and several Union Carbide departments.

The unusual form of construction in which the main lobby is on the second floor is necessary because railroad tracks run through the first and second subterranean levels. Since no space was available for elevator pits below ground, they were placed on the first floor. Two sets of moving stairs lead to the lobby, and 24 passenger elevators then carry workers to their floors.

The most striking feature of the lobby is the Union Carbide display, "Atomic Energy in Action." This group of exhibits includes a mural showing a chain reaction of splitting atoms, an operating model of a nuclear reactor, and a nine-foot

Movable walls (used exclusively throughout the building) provide flexibility.

diameter model of a complex uranium atom 10,000,000,000,000,000,000,000,000 (ten septillion) times larger than an actual atom of uranium.

On the 36th floor is the large-scale IBM 7090 computer used to solve both commercial and scientific problems. Its business uses include sales forecasting, setting schedules, and determining inventories. It is also used for research, development, and engineering problems. Computer time is shared equally by Union Carbide and the data processing firm of C-E-I-R. Rigid temperature and humidity controls are maintained in the computer room.

A footnote to the story of the Union Carbide building is its extensive use of stainless steel. While Union Carbide does not make the material, the company processes the chromium and manganese alloys used in stainless steel. Consequently, stainless steel has been employed in all Union Carbide buildings since 1932. In this latest structure, the material has 177 applications—from baseboards to windows, from desk accessories to the exterior surface.

Architect for the $80 million building was Skidmore, Owings, and Merrill.

Union Carbide shares large-scale IBM 7090 on equal-time basis with C-E-I-R.

Atlantic City Electric Co.

Atlantic City, N.J.

Office of the Year Award

(For offices designed for up to 300 employees.)

EIGHT MILES west of Atlantic City, on the Black Horse Pike, stands a sleekly handsome one-story building of brick, metal, and glass Set in a pleasant, wooded, 30-acre site, it is the new home of the Atlantic City Electric Company's Accounting and Data Processing Center. As such, it houses one of the most remarkable data processing systems ever developed to handle customer billing: a tandem arrangement of an optical scanning device and a large data processor. Together they automate nearly the entire billing cycle for the utility's customers.

Occupying one-half of one of the center's two main wings, the data processing installation (when opened, the first of its kind in the country) offers in dramatic form a vivid illustration of how far the concept of an automated system has advanced in the space of one decade. It makes almost entirely automatic the "reading" of customer payments on accounts, the crediting of payments made against the account number, and the preparation of final bills in a form ready for mailing.

The cycle goes forward in this fashion: As a customer sends in his bill stub with a check or money payment, it is verified manually. Provided payment and bill agree, the bill is sent on to the data processing section. There the bill stubs are "read" by the optical scanner. The scanner converts the account number and the amount paid into five-channel punched paper tape coded for automatic entry into the computer.

The computer then completes the second phase of the cycle. It converts the punched paper tape information into its own internal language, and updates each customer account, crediting the payment received.

The whole system, in other words, represents a complete cycle, since the computer also prepares new statements from meter readings for each customer. It prepares the same

Open and uncluttered, the building's sweeping wings are examples of the best in office design.

Heart of the Accounting and Data Processing Center is the RCA 501 computer which both prepares and processes customer statements.

Conference rooms feature handsome but simple furnishings.

bills, which when paid and fed back into the system, it automatically credits.

So far, it is only the payment procedure that is handled through the optical scanner-computer hook-up. Meter readings still must be manually keyed into punched paper tape for computer input, since the optical scanner cannot interpret the handwritten meter notations.

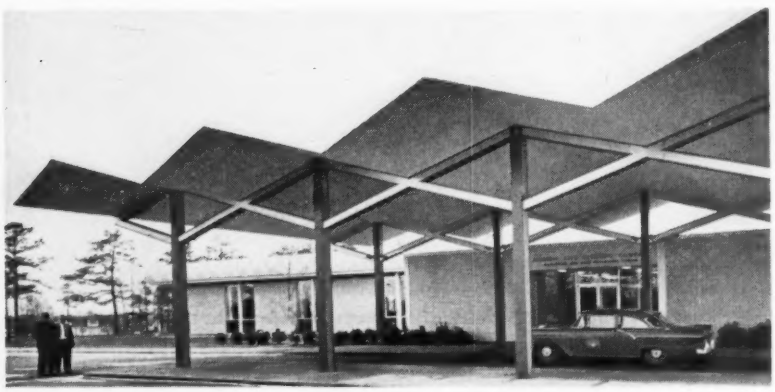
As meter readings are received, they are turned over to an add punch operator, who meshes the new readings with a master tape of customer account numbers. As the tape is run through the add-punch machine, it automatically stops at each account number to permit the operator to key in the meter reading from the meter book record. The paper tape with the meter reading for each account number to be billed is then read into the computer, which calculates the amount due and the balances outstanding for each customer account to be processed. Final figures are read out on a high-speed printer which prints on both sides of a continuous perforated form. One side carries individual customers' names and addresses; the reverse, the meter reading, period covered, any past due payments, and current payment.

This form comes from the high-speed printer as a perforated sheet, each section of which resembles the customary postcard bill. When run through a bursting machine, which separates each section, the company then has a series of postcard facsimiles. These, in turn, are fed into a laminating machine which stiffens them. The result: a durable postcard bill which will go through the mail without difficulty.

When the customer receives his bill, he tears off the stub to return with his payment. These are the stubs which, after being verified, are batched and fed into the computer through the optical scanning device.

The computer system can process 12,000 bills a day in a four-hour period in the bill preparation cycle; the optical scanner can translate 7,200 bill stubs an hour in the crediting operation. It would take 24 clerks to handle the same number of bill stubs each hour.

Although the computer and optical scanner – respectively an RCA 501 and Farrington product – are the heart of the Atlantic City operation, they are by no means the entire complex.



Unusual pitched roof shelters entrance area.

The building, designed by Frank Grad and Sons, of Newark, houses the entire accounting operation as well as the data processing personnel. It also boasts, at a rear addition to the main L-section, a pleasant, sunny employee lounge and cafeteria, glass enclosed, with a relaxing view of the slightly rolling countryside behind the building.

But it is the automated equipment that dominates the building, even in decor. Open and uncluttered, the offices are an example of the best in modern design. But even the colors of the desks, the furniture, the file cabinets used as dividers complement the theme color of the RCA computer – royal blue. Chairs are finished in persimmon, filing cabinets are royal blue, and desks are charcoal with gray plastic tops, all hues that blend or contrast pleasingly with the great blue electronic units.

Building Administrator Charles Garton occupies functional executive office.

Long central corridor bisecting building adds to feeling of spaciousness.

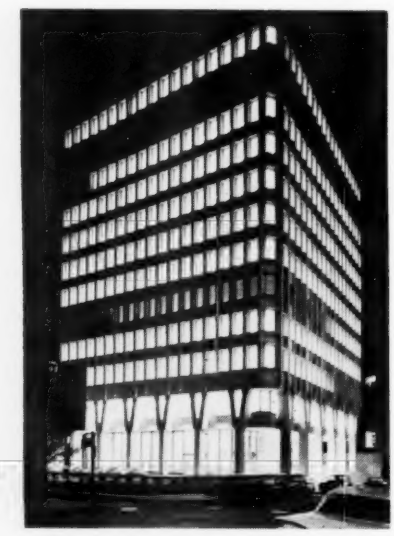
First floor reception area is used for service department to answer customers' inquiries.

Blue Cross-Blue Shield

Boston, Mass.

BOSTON is an old city of stone and brick. A contemporary glass and steel office building there would look almost as out of place as New York's Empire State building transplanted to Peoria, Ill.

Since Massachusetts Blue Cross-Blue Shield are public service organizations, they were very careful not to build a structure that would clash with traditional Boston architecture. Their new precast concrete building blends excellently with its surrounds, even though 50 per cent of its exterior surface is glass.



"Soft corners," Y-shaped columns are unusual exterior features of the building.

Furthermore, the new building has fulfilled the other major objective of low cost. For $4.6 million, or $29.60 per square foot, Blue Cross-Blue Shield acquired high-quality office space for 738 employees. Figuring the usual depreciation and maintenance costs (but not the cost of financing since the organizations drew upon their own legally required reserves), the annual cost per square foot is $3.70. This is well below prevailing rates for office space. And property taxes are non-existent, of course, because Blue Cross and Blue Shield are non-profit organizations.

The 12-story, free-standing building appears to be supported by a series of Y-shaped columns that extend to the top of the second floor. (One facetious rumor has it that the building's achitect Paul Rudolph, who is also dean of Yale University's school of architecture, designed the columns as an act of obeisance to his academic grove.)

Above these columns is an unusual system of external air conditioning ducts. Another unusual exterior feature is the "soft corners," which, according to Mr. Rudolph, "carry the eye around the building."

Inside, the building is an outstanding example of open floor planning. There are no interior walls except a few glass partitions for supervisors. Departments are separated by file cabinets or desks, and average usable space per floor is 7,600 square feet. The building's total space is adequate for a thousand employees.

Flexibility is guaranteed by modular construction. No columns or ducts project into interior space, and areas may be divided on a five-foot module. This module is based on the need for cold air, hot air, and return ducts to repeat at 15-foot intervals.

Other features of the building include:

——a 270-seat subterranean cafeteria and lounge;

——programmed elevators that can empty the building in six minutes;

——a medical department (Employees have Blue Cross and Blue Shield, but they pay for it.); and

——the walnut-paneled eleventh floor where four executives and four secretaries work for each of the two organizations.

Mr. Rudolph worked with the Boston architectural firm of Anderson, Beckwith, and Haible.

Office of the Year Award of Merit

(for offices designed for 300 or more employees.)

Spacious executive office is one of eight on walnut-paneled eleventh floor.

Executive reception area, also on the eleventh floor, provides important first impression to guests. Door leads to board room.

Open floor planning permits adequate light throughout offices. Building can house 1,000 employees.

Kaiser Industries Corp.

Oakland, Calif.

Office of the Year Award of Merit

(for offices designed for 300 or more employees.)

WHEN Henry J. Kaiser in 1955 decided to build a central headquarters for his 61 affiliated Kaiser companies, he had two requirements in mind:

1) That the building be large enough to bring together the various Kaiser staffs scattered throughout 20 buildings in Oakland, and

2) That it use as many Kaiser materials as possible.

Five years later, the first of these requirements was met when the 28-story structure curving along the shore of Lake Merrit was occupied by 2,500 employees. Kaiser Center, the largest office building west of Chicago, provides the space and flexibility essential to the rapidly growing Kaiser operations. It can be adapted to house 4,000 employees.

Says architect Welton Becket of this adaptability in his creation: "Flexibility includes more than just movable partitions. It means the framing of space which can be adapted to virtually any use as the need develops." According to Mr. Beckett, no other structure offers so indefinable a program—constantly changing in layout and function—as an office building.

The second requirement was met equally well. Three hundred Kaiser products make up approximately 80 per cent of all building materials in the center. These include 60,000 cubic yards of concrete, a thousand tons of aluminum, 8,000 tons of steel (including 125 miles of steel pipe), and 250,000 square yards of gypsum lath and plaster.

But these statistics fail to tell the whole story. Kaiser Center also commemorates the spectacular history of Henry J. Kaiser and his enterprises. Since 1914, when he founded his first company to pave a street in Vancouver, British Columbia, sales have skyrocketed to a billion dollars a year, and his

Curved shape of Kaiser Center eliminates long, monotonous corridors. Private offices are on both sides.

Ceiling-to-floor windows afford vistas of Lake Meritt from 800-seat employee cafeteria.

Executive office shows application of "total design" concept.

Kaiser Center curves along shore of lake.

Escalator connects concourse level with second-floor lobby.

industrial empire now encircles the globe with 97 plants and other facilities.

Kaiser Center is an expensive building—about $45 million dollars for 1,700,000 square feet of space. Almost half of this area is usable office space; the remainder is devoted to shops, parking, and mechanical equipment. Contemporary in design, the building's front and back are sheathed in aluminum and glass. End panels consist of sections of precast concrete with white dolomite aggregate stone embedded in them. The office structure "floats" above its seven-acre site on a five-foot-thick concrete slab foundation.

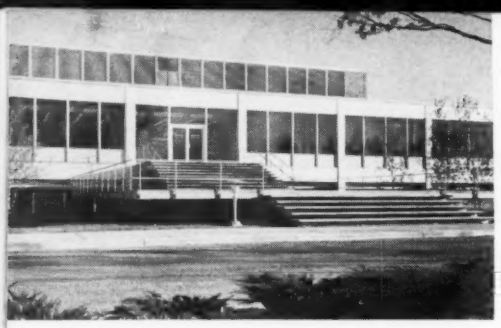
An escalator rising through the two-story open well connects the shops on the ground floor with the second floor lobby. From there, 17 high-speed, automatic elevators carry traffic to three zones in the office building.

The second floor contains a 400-seat auditorium, a carpeted dining room that can accommodate 800 persons, and service shops. Floor-to-ceiling windows in the dining room afford charming vistas of Lake Merritt.

The main building has four basic colors—blue, green, gold, and beige. The color selected for each Kaiser company for its floor appears in various shades on the ceilings and walls, and determines the colors for carpeting and furniture fabrics.

Two novel features of Kaiser Center are the three-acre landscaped roof garden atop the public garage, where trees and benches are provided for the respite of employees, and the extensive communications center. Private teletypewriter systems, operating over 27,000 miles of private lines, link Kaiser's major American facilities; 2,300 telephones with individual direct dialing numbers permit world-wide conference calls.

Private teletypewriter system is part of Kaiser's world - wide communications network.



Parke, Davis & Co.

Ann Arbor, Mich.

Office of the Year Award of Merit

(for offices designed for up to 300 employees)

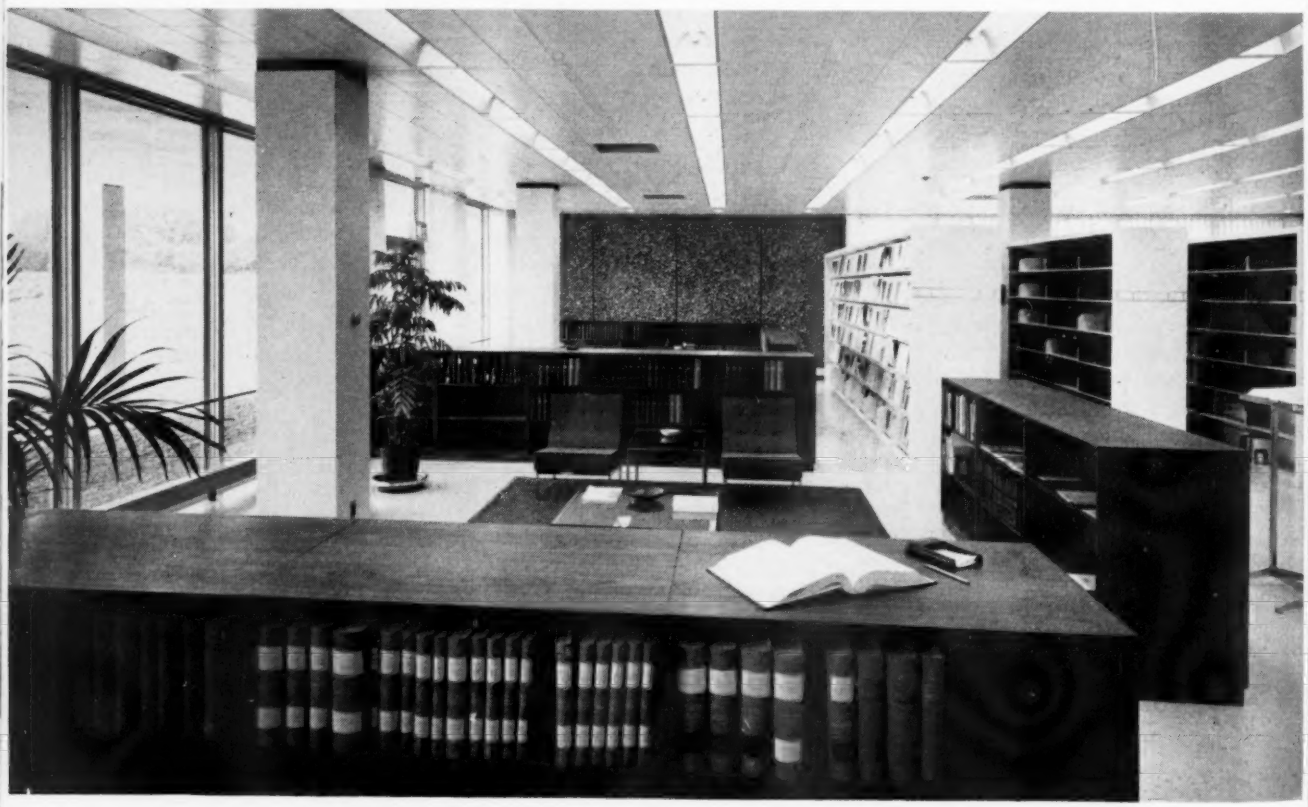
THE REFRESHING clarity of Parke, Davis' new research center at Ann Arbor is more than the clearness of the air wafting over the rolling Michigan meadowland on which the center rests. It is more, even, than the singularly clear purpose of the $13.5 million project: pharmaceutical research.

This clearness is embodied in the very buildings themselves—in the design and calculated detail of the labs, library, and especially the administrative areas. Before anything was decided beyond the fact that the company wanted a new research facility, Parke, Davis & Co. spent half a year in consultation with Skidmore, Owings & Merrill, architects and engineers, analyzing and re-analyzing the needs of such a project.

They were not even certain at the start of these studies whether the center would consist of one building, two buildings, or ten. As it turned out, there are five. The planners quickly saw that research itself, and the *administration* of a research center, are different functions that demand different facilities. Thus, the research laboratory and the separate administration building. The latter is the recipient of the "Office of the Year" Award.

Though the underlying purpose of a research center contrasts markedly from the purpose of a commercial enterprise, the same problems of fitting office form to office function—of doing a better day's work more efficiently—must be met and solved. In fact, the solutions to the pharmaceutical firm's office problems may soon have nation-wide influence.

For example, specially designed steel furniture for the center's non-executive office areas is reportedly going into production for general sale. A technique of realigning office space with a minimum of movable partitions also may find wider application. Believing that movable partitions do not pay unless they are moved three times, the



Parke, Davis' extensive medical library is necessary for pharmaceutical research.

Although most walls are of permanent plaster, flexibility is not sacrificed.

architects recommended that most walls be of permanent plaster. By arranging the walls like the teeth of a widely spaced comb aiming at a straight wall opposite, the designers were able to introduce easily moved wood panels at the tip of any "tooth" to expand or contract departments when necessary.

The administrative staff of 75 employees shares the administration building equally with the clinical investigations department. The two departments also share numerous conference rooms of varying sizes and the commodious auditorium used for formal lectures. (An unusual feature of the auditorium is its false floor, which now slopes downward toward the front of the room; if the area is needed for more offices, it can be "flattened.").

Commenting on the building's flexibility, Dayle K. Boyle, manager of research administration, noted: "We haven't tried to make the space so rigid that we couldn't use it for something else, and that 'something else,' more often than not, is office space."

Functional, attractive space is provided for 75 administrative workers.

Central cafeteria is accessible to employees of all five buildings.

Standard Rate & Data Service, Inc.

Skokie, Ill.

Giant mural on advertising is outstanding feature of the lobby.

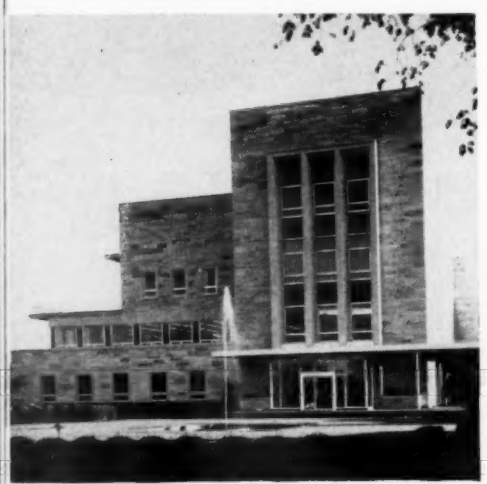
Office of the Year
Award of Merit

(for offices designed for up to 300 employees.)

"LAVISH" is the only way to describe the new office of Standard Rate & Data Service, the "Media Center" for the prospering advertising industry.

The new three-story structure, 17 miles north of Chicago on Old Orchard Road, is impressive from the first glance. At the main entrance a formal garden contains a shimmering fountain that is illuminated with color at night.

Once inside the two-story main lobby, the visitor is overwhelmed by the giant mural "The Story of Advertising is the Story of Human Progress" that looms above the circular staircase and calm, plant-lined pool on the first floor. Edgar Miller's interpretation of this mural



From shimmering fountain (left) to handsome executive office, new building carries theme of luxury throughout.

President C. Laury Botthof's office contains informal furniture grouping for conversation.

utilizes a predominance of gold and silver foil—a technique for which he is famous.

Office interiors continue the theme of luxury. The office of Chairman of the Board Walter E. Botthof, for example, features a natural rock waterfall. Spacious lounges, an art gallery, murals (especially the 15- by 26-foot scene of George Washington taking his first oath as President, by Ezra Winter), and numerous other works of art complete the atmosphere.

Plans are now underway, according to SRDS executives, to set up a rotating exchange of paintings with nearby International Minerals and Chemical Corp., Skokie, a 1958 "Office of the Year" Award of Merit winner.

A staff of 250 works in the suburban structure. Five divisions—personnel, circulation, accounting, rate service, and printing—are on the first floor, and three—promotion, sales, and research—are on the second. Also on the first two floors are the electronic data processing center and midwest offices of *Media/Scope* magazine. The third floor is the executive floor.

The building is the work of architects Maher and McGrew, who also designed SRDS's previous building in Evanston, Ill.

General office areas, such as rate service division, use open space.

Executive offices are congregated on the third floor of the suburban building.

1960 "OFFICE OF THE YEAR" EQUIPMENT SUPPLIERS

Union Carbide Corp.

Air conditioning: Worthington, Carrier
Carpeting: James Lees Carpet
Data processing equipment (electronic): IBM
Desk Sets: Smith Metal Arts, Sheaffer Pen, Waterman Pen
Filing: General Fireproofing, Estey, Tab, Diebold
Floor Covering: "Gold Seal," Congoleum-Nairn, Flintkote
Furniture: Steelcase, Robert John, Stow and Davis, Knoll, General Fireproofing, Albano, Lehigh, Thonet, Princeton
Intercommunications equipment: New York Telephone, Terry Phone, Lamson
Lighting equipment: Frink
Movable partitions: Hauserman, Langenbacher
Photocopiers and duplicating equipment: Copease, Thermo-Fax
Safes: Mosler, Diebold

Atlantic City Electric Co.

Acoustical materials: Acousti- Celotex, U.S. Ceramic Tile
Carpeting: James Lees Carpet
Data processing equipment: Farrington, RCA
Desk sets: Sheaffer, Gem Calendar
Dictating equipment: De Jur-Grundig
Filing equipment: Modern Steel Co.
Floor covering: Armstrong
Furniture: General Fireproofing
Intercommunications equipment: Muzak
Lighting equipment: Luminous Ceiling of Chicago
Movable Partitions: Kawneer, Unifab
Photocopiers and duplicating equipment: Apeco
Safes: Mosler

Blue Cross-Blue Shield

Data processing equipment: IBM
Desk sets: Peter Pepper
Dictating equipment: Dictaphone
Floor covering and carpeting: Goodrich
Furniture: Lehigh, Keller, Hermann Miller, Stendig, Howe, General Fireproofing, Steelcase, Colosi
Intercommunications equipment: Bell Telephone System
Microfilm equipment: Diebold
Movable partitions: Hauserman, Mills Partition
Photocopiers and duplicating equipment: Apeco, Haloid Xerox, Thermo-Fax
Safes: Mosler

Kaiser Industries Corp.

Acoustical materials: Kaiser Gypsum, Fyrake
Air conditioning equipment: Westinghouse, Worthington
Carpeting and floor covering: Bigelow, Mohawk, Goodyear, General Tire
Data processing equipment: Remington Rand
Furniture: General Fireproofing, Art Metal, Steelcase
Intercommunications equipment: Stromberg Carlson, Voycall, Dictograph
Movable partitions: Hauserman
Safes: Diebold
Vertical conveyor systems: Standard Conveyor Co.

Parke, Davis and Co.

Acoustical materials: Armstrong Cork
Air conditioning equipment: American Air Filter, Carrier, Minneapolis-Honeywell
Carpeting and floor covering: Mohawk Carpeting, Armstrong Cork Tile
Data processing equipment: IBM, Monroe, Olivetti, Ohdner, Friden
Desk sets: Smith Metal Arts
Dictating equipment: Edison, IBM
Furniture: Steelcase, Georg Jensen, Knoll Associates, Hermann Miller, Dunbar
Intercommunications equipment: Bell Telephone
Photocopiers and duplicating equipment: Haloid Xerox, Gestetner, Thermo-Fax, Copease

Standard Rate & Data Service, Inc.

Acoustical materials: Armstrong, U. S. Gypsum
Air conditioning equipment: Carrier
Data processing equipment: IBM
Desk sets: Smith Metal Arts
Dictating equipment: Dictaphone, De Jur-Grundig
Filing equipment: Steelcase, All-Steel Equipment, Yawman Erbe, Pro-File
Floor covering: Kentile
Furniture: Macey Fowler, Todd, Dunbar
Intercommunications equipment: Illinois Bell
Photocopiers and duplicating equipment: Haloid Xerox, Copease
Safes: Herring-Hall-Marvin, Mosler
Water Coolers: Halsey Taylor

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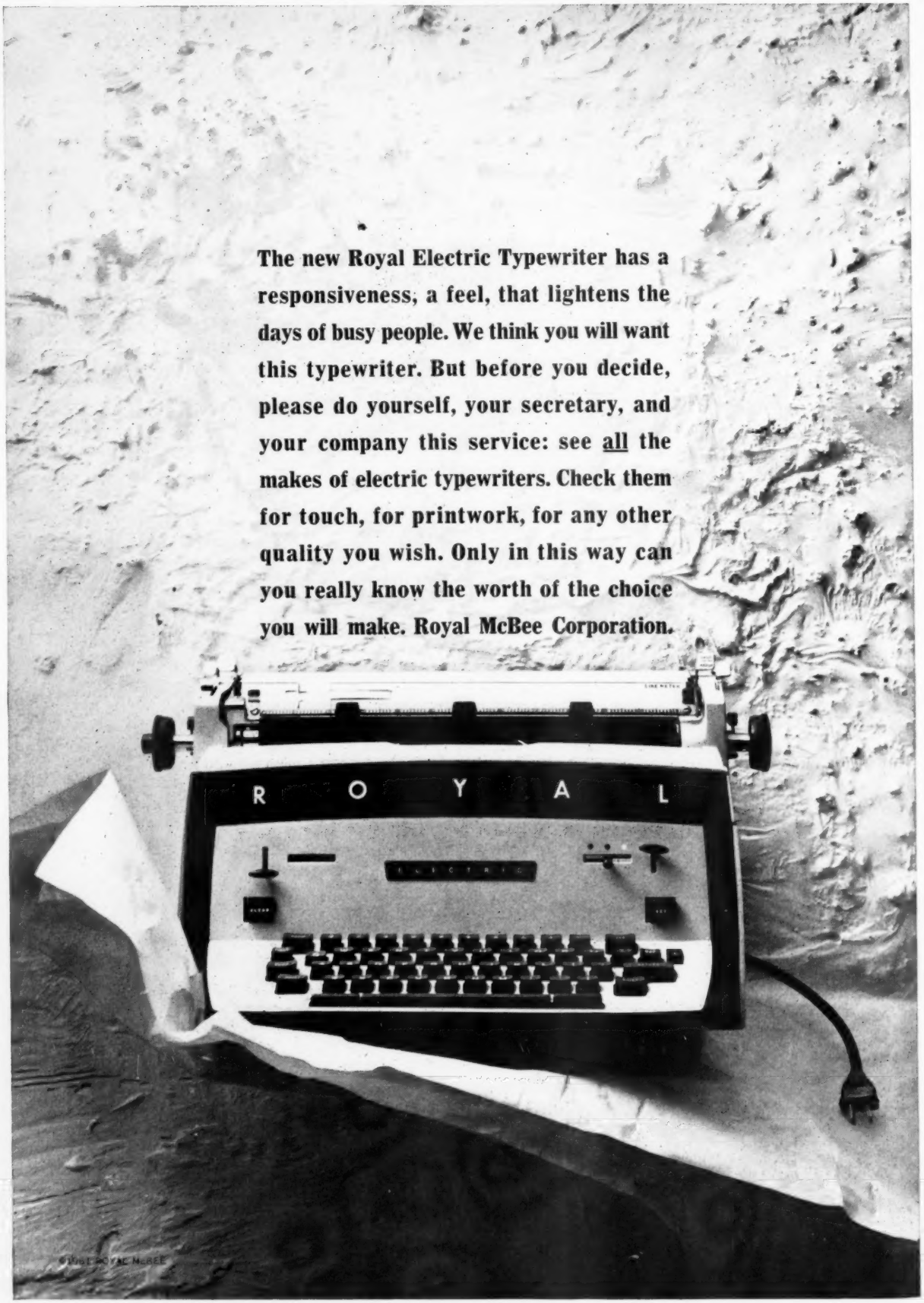
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(Circle No. 50 on Reader Inquiry Card)

TYPEWRITERS,

Carbon paper, and typewriter ribbons

By JOHN M. SINE

WHAT kind of typewriter will you buy in 1961? This question, combined with external pressures and internal fissures, is changing the face and manner of the typewriter industry. Factories that have not altered methods for the past 50 years are being revitalized with modern tools and new systems of production. Some plants have shut down temporarily, others are running extra shifts.

Last year, foreign typewriter competition caused American manufacturers to send up a hue and cry for a higher tariff, but the plea was dismissed for lack of evidence that imports "would cause or threaten serious injury to the domestic industry. . . ." Over the past ten years the sale of standard manual machines has decreased 40 per cent; in 1961, electric typewriter sales will probably account for more than one-third of the total sales volume of the industry. At least two new foreign electric typewriters will be introduced on the American market this year.

The distance between the cost of an office manual typewriter and the office electric has been brought up short by the introduction of a "compact" electric typewriter that sells for $225, the mean price of an office standard. Will manual typewriters be more readily replaced by the lower-in-cost "compact" electric? The question is foremost in the minds of industry marketeers.

In the midst of shifting markets is the news that RCA has invented a device that will receive direct dictation and produce a printed copy. It is an idea in the throes of experimentation that might obliterate the current typewriter market altogether.

Although electric typewriters have been glamorized by advertising campaigns, they are popular for more practical reasons: uniform print, a cleaner "write," more uniform carbon copies, less fatigue and more rapid operation than manual machines. In addition to the advantages inherent in electrical power, electric typewriters are incorporating new features such as proportional spacing, horizontal half-spacing, paper injector-ejectors, and additional keys. The striking power of each character can be regulated on some electrical machines;

Electric typewriters have become an indispensable medium of executive correspondence. They are also displacing manual machines in areas of production typing.

Typewriters have interchangeable carriages or platens to suit your specific needs.

At the turn of the century the typewriter revolutionized business correspondence. The female typist was also a phenomenon of the modern age.

Model 5635 of the Auto-Typist will automatically produce pre-composed paragraphs or letters at the press of a button.

others have one control to regulate the impression of upper and lower case characters.

The following pages contain a listing of major typewriter manufacturers and the products they market in this country. Individual models of manual, electric, and portable typewriters suited for office use, are listed with their characteristics. Although the prices given are the latest obtainable, they do not include state or local taxes and are subject to change without notice.

Larger carriages are usually ordered at a higher price than the standard price indicated. Interchangeable carriages are not to be confused with interchangeable platens. The platen is the rubber roller or cylinder that is a functioning part of the unit typewriter carriage. A hard or soft platen will affect the print — especially in the multicarbon writing (discussed in the section on carbon paper).

T-1 Addo-X Inc., 300 Park Ave., New York 22. Firm distributes the Adler line of standard office and portable manual typewriters, and electric typewriters manufactured in West Germany. The Adler Universal standard manual typewriter is equipped with a 13-inch interchangeable carriage that has an adjustable paper injector to assure correct positioning of paper. Margins are set by pressing a button; ribbon is reversed automatically. Carriages are available in widths of 13, 15, 18, 25, and 35 inches. Other features: decimal tabulation, half line horizontal spacing, 46 keys, carbon ribbon attachment. Price, including F.E.T., $249.

The Adler Special, a streamlined standard typewriter, has a 13-inch carriage as standard equipment and many of the features found on the larger Universal. Among the special adjustments are: five different line spacings; mobile lateral paper guide with zero setting; automatic margin set with margin release on keyboard. The machine has 46 "finger form" plastic keys, automatic tabulator and tab clearance key, and ribbon adjustment. Weight is 25 pounds. Price, including F.E.T., $199.

The Adler Primus is an office portable having 44 keys, an individual front set tabulator and total clearance, automatic ribbon reversal, three-position ribbon switch, margin stops and release. Among other features the Primus has an interchangeable platen and a spring-loaded paper support. Price, including F.E.T., $129.50.

The Adler Electric typewriter is equipped with an adjustable keyboard that is said to enable an operator to gradually adjust to the shallow key depressions of an electric machine. The machine has five repeat keys, a space bar, and a pneumatic carriage brake. The 13-inch carriage is interchangeable. Among oher features are: automatic, adjustable paper injector; word expander, automatic dotting and underscoring including double underscore; control of impression, adjustable touch conrol. The machine has 46 keys and will automatically turn itself off when not used for approximately three minutes. Price, including F.E.T., $472.

Adler Typewriters, *SEE* Addo-X., Inc.

T-2 Alma Office Machine Corp., 349 Broadway, New York 13. Firm is national distributor of Everest standard office and portable typewriters manufactured in Italy. The Everest Standard 92 typewriter is equipped with a 12-inch carriage that is interchangeable with 14, 18, 22, and 27-inch carriages. Two of the 46 keys have removable keystems. Margins are set automatically. There are five vertical line spacings plus half-spacing vertically and horizontally. Type bars that jam

For more information about any product circle corresponding number on reader service card inside back cover.

the compact office electric by Smith-Corona: $225

Full-sized features in a compact size./The new Compact 200 is an office electric priced at a sensible $225. / It's the compact! New American engineering ideas now make parts work more efficiently in a smaller space. / The carriage is 12 inches wide. The keyboard is the same size as a standard electric. Carriage return is automatic. It does all the jobs of a conventional electric—all but the marginal jobs. But it costs just half as much (or about what you would pay for a manual). / To see this new idea in electrics, just call your Smith-Corona Marchant representative, today.

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can be released by pressing an anti-jam button. Among other features are: "No Hold" tabulator bar that moves to the next position without being held down; touch adjustment; ribbon switch; margin release key; variety of type styles including script. Price, excluding F.E.T., $212.50 At optional cost is a carbon ribbon attachment.

Model 92 Elematic is the same standard machine mentioned above with an electric carriage return.

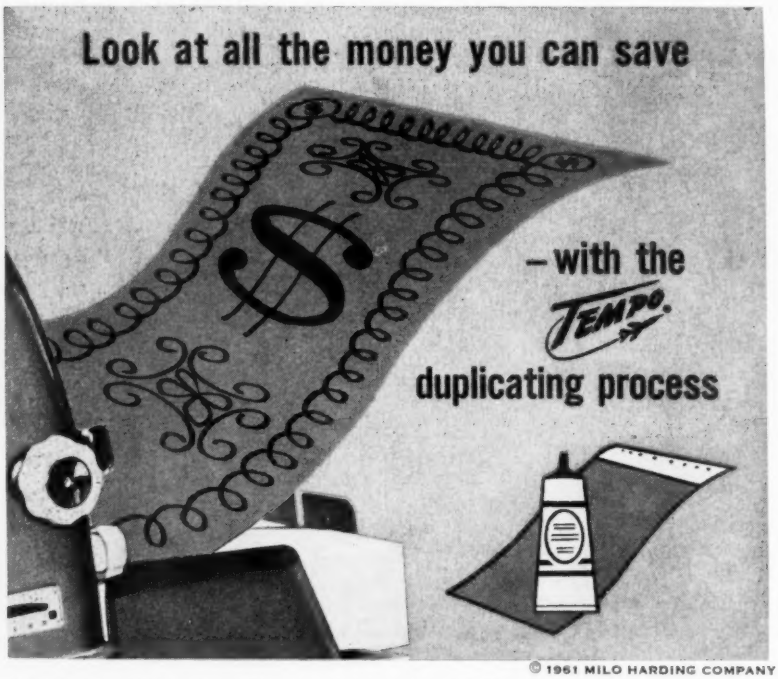
Everest K2 Portable is available with a 10 or 11-inch platen, and may be purchased in many type styles, including script. The machine has 44 keys, key-set tabulator, ribbon color switch, line space lever with 1½ line spacing, margin release, touch control. A metal carrying case is included. Price, excluding F.E.T., $109.50.

T-3 American Automatic Typewriter Co., 2323 North Pulaski Rd., Chicago 39. There are four models in the Auto-Typist line of equipment for the automatic control of any make standard electric typewriter. Letters are typed from a pre-composed, perforated roll. Model 5635 Selector Auto-Typist can produce 150 words per minute and gives a total of 250 lines of stored copy. Complete letters or paragraphs stored internally are activated by one of 30 available buttons. The operator types the heading and salutation of a letter and then presses the button that selects the proper letter or paragraph to be writen automatically. Price, excluding taxes, without typewriter, $1,275.

Model 5660 Auto-Typist accommodates two record rolls with a total capacity of 500 typewritten lines. The machine provides 100 selector buttons to control letters and paragraphs. Operation is in other respects similar to the above model. Price, without typewriter, excluding taxes, $2,350.

Model 5600 Standard Auto-Typist is designed to type a complete pre-composed letter. Name, date, and address are typed manually as well as personalizing inserts. A roll containing a new letter can be easily changed. Price without typewriter, excluding taxes, $900.

Model 5635 functions similarly to



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(Circle No. 29 on Reader Inquiry Card)

The Adler electric from Addo-X Inc.

The Everest K2 portable from Alma Office Machine has big machine qualities.

For more information about any product circle corresponding number on reader service card inside back cover.

A compact data communications center

The Teletype Model 28 ASR set is a machine of many talents—time and money saving talents that can go to work for you. With it, your data can be distributed to many different locations—in the same building, different parts of the country, even overseas. And you can collect data with equal ease and flexibility.

The Model 28 ASR enables you, if you wish, to prepare records on multi-copy forms and simultaneously communicate the contents of these records to distant points. Thus the ASR reduces your paperwork and at the same time overcomes the "distance barrier" for sales orders, invoices, purchase requisitions, even payroll checks.

And with the Model 28 ASR, you can "run the gamut" with punched tape—encode data into tape . . . transmit from tape . . . integrate repetitive data from previously prepared tape with variable data by keyboard . . . obtain punched tape as a by-product of communications for computer and other business machine input.

All of these data handling facilities are available to you in a compact console, occupying less floor space than required by the average office desk.

Teletype Corporation manufactures this equipment for the Bell System and others who require the utmost reliability from their data communications facilities. Teletype equipment can be used with Data-Phone and other communications services.

For a free brochure on the Model 28 ASR, write to Teletype Corporation, Dept. 36E, 5555 Touhy Avenue, Skokie, Illinois.

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(Circle No. 59 on Reader Inquiry Card)

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Any typing that includes copies deserves sharp, black, readable copies. The kind Park Lane® carbon gives you.

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Park Lane is one of Roytype's finest grades of carbon paper yet it costs mere pennies to use.

Mr. Roytype knows all about carbon paper and he'll be glad to help you choose exactly the right weight and finish for your particular job. He knows all about every other office supply need, too. Just ask and his full stock and full knowledge are at your command!

ROYTYPE®

A complete line of business supplies . . . expert help . . . and the fastest service too.

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Please have our Roytype Representative show me PARK LANE carbon paper.

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(Circle No. 51 on Reader Inquiry Card)

the 5630 but provides larger cabinet and more working space. Price, without typewriter, excluding taxes, $1,325.

T-4 American Business Systems, Inc., 2929 B St. Philadelphia 34. The Snapset Automatic Feeder is a machine that feeds single-set, one-time carbon forms directly into any make of typewriter. The form is perfectly aligned and ready for typing. Forms of two to twenty parts, up to nine inches wide by 14¾ inches long can be accommodated. The typewriter can be used for other work at any time.

The Snapset Automatic Feeder available from American Business Systems, Inc.

Auto-Typist automatic control of typewriter, *SEE* American Automatic Typewriter Co.

Everest typewriters, *SEE* Alma Office Machine Corp.

T-5 Friden Inc., San Leandro, Calif., Firm manufactures the Flexowriter line of electric typing machines that can produce by-product punched tape for use with data processing equipment, the Justowriter electric copysetting machine, tape punches, and more sophisticated automatic writing and computing machinery.

The Model SFD Flexowriter can

For more information about any product circle corresponding number on reader service card inside back cover.

not just a desk...

it's a work station

Your secretary does one thing at a time. But if she's like our secretaries, she does a thousand things a day.

She needs the wide working space of a *work station* to do these things better, quicker, easier and perhaps happier.

Here's a unit that doubles her working area in only inches more floor space than the conventional desk. Here's space that gives her *two* pedestals full of efficiency drawers arranged any way she wants them. She has drawer space for your constant-reference files and hers, for her working supplies, her extra pair of shoes, box of facial tissues, handbag, lunch, lunchtime novel, and more.

For her personal efficiency, your secretary needs a solid-standing steel support for that dandy but heavy motorized typewriter (or other machines) you've seen fit to give her. This work station is solid enough not to shake when she puts the machines into action. And still there's plenty of room for her notes (your dictation), her reference material, telephone, desk tray, and her bud vase.

This sturdy and attractive work station is part of Y&E's Mod-U-Ell line. Mod-U-Ell means that it is made up of many components which can be put together in many different ways to provide the most efficient work station for the person lucky enough to work at it. The L extension can be left-hand or right-hand and as long as 80 inches for as much extra work space as a person needs. Tops can be of many sizes and surfaces. Colors can be suited to you, your secretary or your office scheme.

There's more to Mod-U-Ell. A Y&E representative located wherever you are will tell you more. Or, if you can beat your secretary to it, tear out this coupon for literature.

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(Circle No. 66 on Reader Inquiry Card)

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Commander — Rainbow
Marathon — Silk Gauze

CARBON PAPER RIBBONS
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CARBON PAPER
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431"829" . . . machines that can read . . . performing instantly and accurately tasks that take scores of persons weeks to accomplish! The scope and impact of their fantastic abilities on the world of business are just beginning.

In the field of banking, for example, modern electronic business equipment reads a special language of its own to sort, list and post checks automatically. The ability of the equipment to recognize these symbols depends upon the quality and strength of a unique magnetic ink used to form the image.

Columbia—long a leader in research and development of carbon papers, ribbons and duplicating supplies—has played a major role in the development of these magnetic inks. This scientific breakthrough is even more significant because it is the first in a field whose boundaries are yet unmeasured . . . a field in which Columbia is most capably equipped to pioneer.

Columbia

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COLUMBIA RIBBON & CARBON PACIFIC, INC., DUARTE, CALIF.

(Circle No. 15 on Reader Inquiry Card)

produce a letter automatically from a punched tape at a speed of 100 words per minute. The operator types the document, and a punched tape is produced simultaneously which is then used to create letters automatically. The Friden Selectadata is an auxiliary tape-reader used with the Model SFD that can quickly search and select special paragraphs, names, and addresses to be inserted into the text. The SFD is available in foreign language keyboards and carriage lengths of 12, 16, or 20 inches. Price of basic SFD, excluding F.E.T., $2,600; Selectadata price is approximately $1,000. A model of Flexowriter, called the President, offers several styles of type plus the spacing of each character proportionally according to its width. Price, excluding F.E.T., $2,900.

The Flexowriter Programatic Model SPS will edge-punch and read unit record cards, produce documents and by-product punched tapes for automatic writing and data processing. The machine is designed primarily to read edge-punched cards for typing repetitive data automatically; power requirement is 115v, 60 cycle A.C.; available in 5 or 8-channel models. Price, excluding F.E.T., $3,100.

The Flexowriter Model FG is made in six variations for producing typed documents and by-product punched tape for actuating automatic plate embossing machines. Some models also produce tape for operating commercial teletypewriting equipment.

The Justowriter consists of a Recorder unit on which an unjustified proofreading copy is produced along with a punched paper tape. The tape is then fed into the second unit, or Reproducer, which types the justified document in even-margin paragraphs as previously indicated by the operator. Copy can be set in double columns, to run-around a photo or art-work, or it can be centered, tabulated, double-spaced, or single-spaced. Machine is also available in variety of typefaces. Price of Justowriter Recorder,

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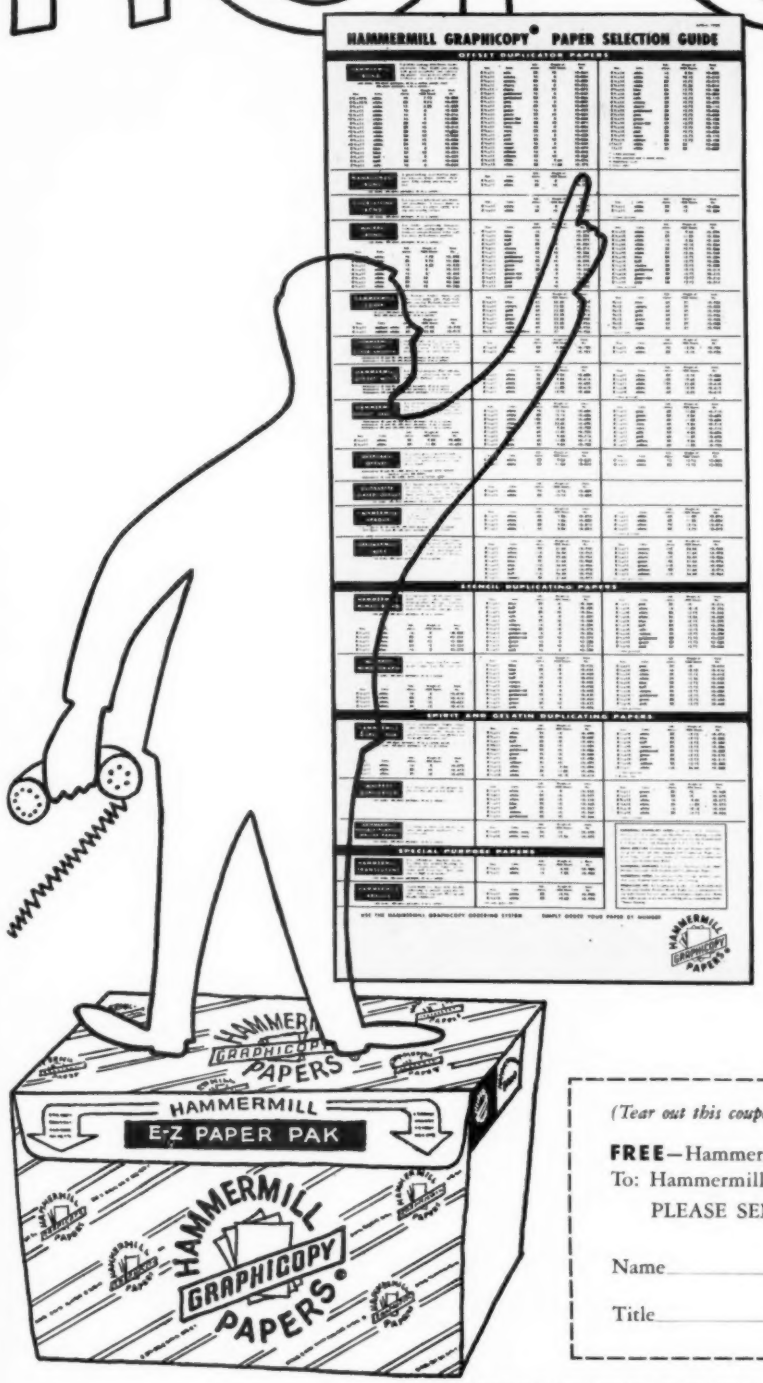
HGPSG



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To: Hammermill Paper Co., 1471 E. Lake Rd., Erie 6, Pa.
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Name_____

Title_____

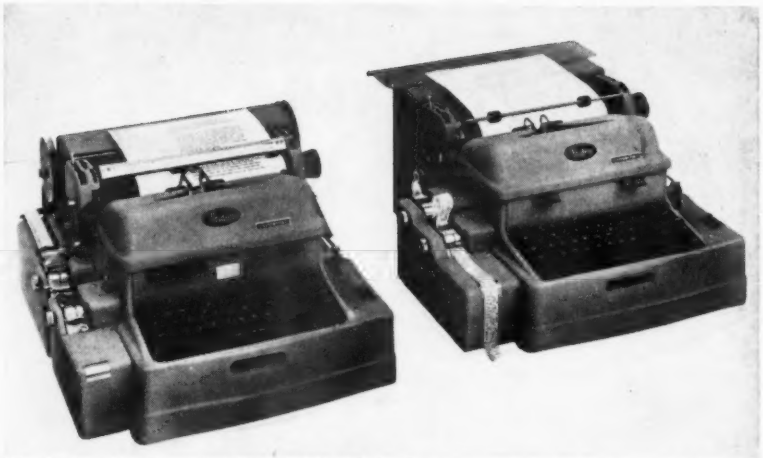
(Circle No. 28 on Reader Inquiry Card)

excluding F.E.T., $2,200; price of Justowriter Reproducer, excluding F.E.T., $2,650.

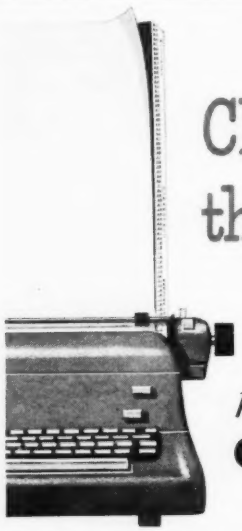
Hermes typewriters, *SEE* Paillard, Inc.

T-6 Imexco Trading Corp., 5 East 17th St., New York 3. Firm distributes the Triumph line of portables made in West Germany, two of which are suitable for office use.

The Triumph Perfekt is a 44-key, 88-character keyboard machine with three ribbon positions, tabulator, quick margin set, and half spacing. Other features are: automatic ribbon reversal; transparent card holders, automatic paper feed. Available in choice of type styles, including script. Price, excluding F.E.T., $119.50.



The Justowriter Recorder Model AA and the Justowriter Reproducer from Friden, Inc.



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plus: hand cleansers, type cleaners, instrument oil, and duplicating fluid.

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(Circle No. 65 on Reader Inquiry Card)

The Triumph Perfekt portable typewriter distributed by Imexco Trading Corp.

T-7 International Business Machines Corp., Electric Typewriter Div., 545 Madison Ave., New York 22. There are several versions of the basic IBM electric typewriter depending upon the job to be performed.

The standard electric typewriter features a 13-inch "Quiet-Glide" carriage that is said to minimize the noise of tab and carriage stops. Touch control can be adjusted to suit the operator. Typamatic keys

For more information about any product circle corresponding number on reader service card inside back cover.

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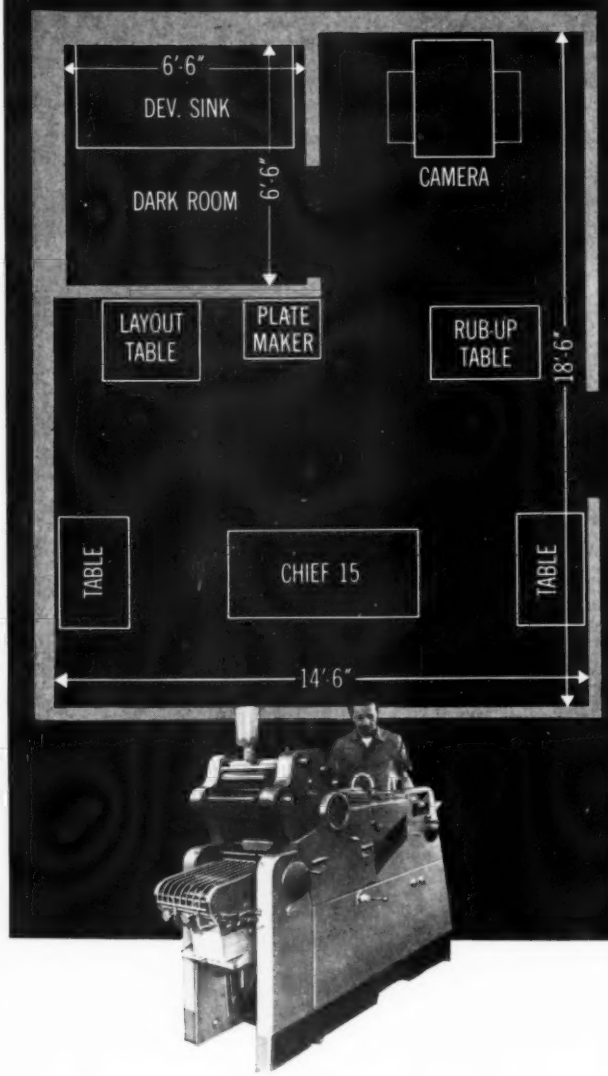

For less than a dollar per *working hour*, you can purchase a complete ATF offset department, including: press, camera, darkroom sink, negative layout table, platemaker, and utility table. If you have some seldom-used equipment to trade in, chances are you will need little or no down payment.

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(If you have trade-in equipment, list descriptions, models, serial numbers)

American Type Founders

(Circle No. 7 on Reader Inquiry Card)

give automatic repetition of carriage return, underscore, spacebar and backspace. The ribbon is automatically rewound and there is a control for multiple copies. Standard carriage size is 13 inches, but carriages of 17, 20, 24, and 30 inches are available. Prices start at $445.

The electric model with decimal tabulation has an additional row of keys, located above the numeral row, for statistical typing. Two extra keys containing the comma, period, equal marks, and dash, make it possible to type reports without leaving the upper keyboard. Another variation of the standard electric provides changeable type bars; special symbols – mathematical, chemical, linguistic – can be changed by the operator in about 30 seconds. A formswriting model of the standard electric has an attachment by which continuous forms can be easily processed.

The IBM Executive electric features proportional spacing of letters: Each character is measured in units.

The IBM Executive electric typewriter.

An "i" takes two units of space, an "e" three units, and an "m" takes five units of space. The Executive is available in 16 type styles and six colors. Other features: typamatic keys on the carriage return, the three-unit space bar as well as underscore; keyboard margin set; multiple copy control; personalized touch control; and transparent card holder. The machine may be purchased in fabric ribbon or carbon paper ribbon models, and in carriages of 13, 17, and 20 inches. Prices start at $625.

T-8 Inter-Continental Trading Corp., 90 West St., New York 6, N.Y. Firm is U.S. distributor for Olympia standard office and portable typewriters manufactured in West Germany.

The Olympia SG-1 Standard Office typewriter has an interchangeable carriage with alternative widths of 10, 12, 13, 15, 18, 24, 35 inches. The 10, 12, 13 and 15-inch carriages are equipped with an automatic paper injector-ejector and plastic paper support. Each of the 46 keys on the Olympia keyboard is spring-loaded to cushion the shock of finger contact. A feature of the machine is the correcting space bar that allows horizontal half-spaces to be made for inserting corrections and aligning right-hand margins. The ribbon adjustment has four positions; the touch adjustment has eight positions. Machine can be equipped for operation with carbon ribbon. Other features are: margin release and complete tab clearance;

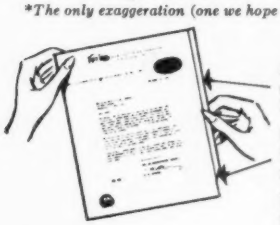
For more information about any product circle corresponding number on reader service card inside back cover.

Secretaries never die...

They just stay young indefinitely*—that is, if they use Kee Lox Grip-N-Pull carbon paper. Ask any girl who is already using it (and note how fresh and vivacious she looks—even at quitting time). She'll tell you what nice copies she gets, how clean they are. And she'll be equally enthusiastic over Grip-N-Pull's other features—automatic warning of last typing lines, automatic rotation, automatic alignment.

You too can stay young indefinitely* by letting Grip-N-Pull carbon paper make your work easier and pleasanter. And your boss will be interested in knowing that Grip-N-Pull, with all its advantages and long wear, still costs no more than regular carbon paper which does not have the exclusive patented features of Grip-N-Pull.

**The only exaggeration (one we hope will cause a smile) in this message.*



All carbons are removed quickly in one clean operation, using uncoated edge. Clean hands, clean work, clean desk.

Lower right of uncoated edge is die cut to tell how much space is left at bottom of sheet.

FREE samples when requested on company letterhead.

"Over Sixty Years of Good Impressions"

KEE LOX MANUFACTURING CO.
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CARBON PAPERS AND INKED RIBBONS

Sold through KEE-LOX branches and selected independent stationers

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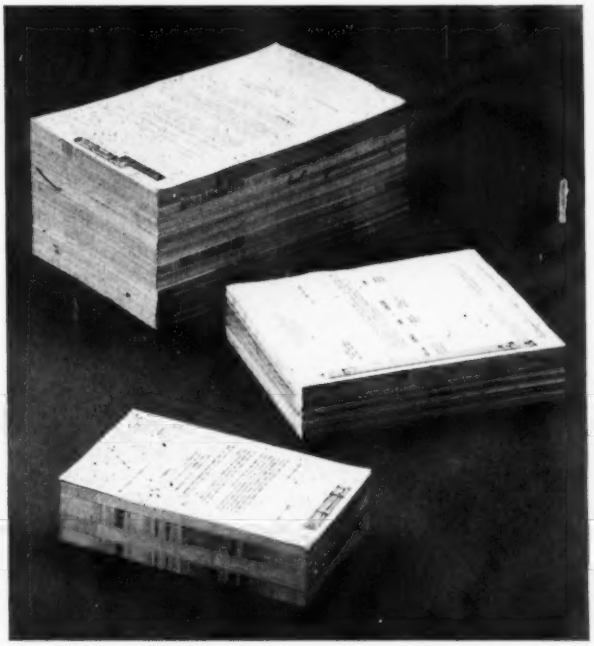
Famous Acco fastener

Simply slip punched papers over pronged base section of fastener. Then add compressor section to lock papers and prongs in place.

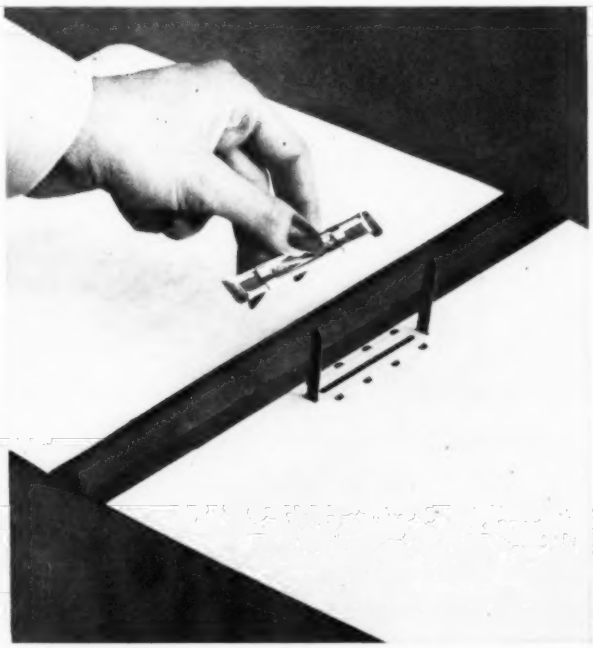


Keeps papers secure

Holds letter, legal—any size sheets. Ideal for work sheets. Comes in 7 base lengths—from 2¾" to 8½". Up to 6" capacity.

Makes folders spillproof

To avoid the hazards of loose paper filing, simply punch two holes in any ordinary folder and insert Acco fastener as shown above.



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The fastener is built right into this Accobind folder. Made of firm pressboard, it never sags, saves file space. Choice of 5 colors.

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(Circle No. 1 on Reader Inquiry Card)

key-set tabulator; transparent card holders; variety of type styles, including script; line space indicator for five settings; type bar return key. Price, 12-inch carriage, excluding F.E.T., $225.

The Olympia SM 4 portable has many of the features of the office machine, including a model equipped with a 13-inch carriage. Machine has 44 keys, key-set tabulator, touch adjustment, correcting space bar, spring-loaded key tops, margin release, and is available in a choice of type styles, including script. Price, excluding F.E.T., $119.50.

The Olympia SG-1 from Inter-Continental

Olympia Typewriters, *SEE* Inter-Continental Trading Corp.

T-9 Paillard, Inc., 100 Sixth Ave., New York, N. Y. Full information on the company's line of Hermes standard manual and portable machines was not available at press time. The Hermes Ambassador is an electric typewriter equipped with 46 keys, all of which are repeat keys. Operation may be quickly switched from fabric to carbon ribbon; carriage is interchangeable. Among special controls are: jammed-key release; electric impression control and electric touch regulator; electric shift for capitals, card holder. Machine is available in a variety of type styles. Price with 13-inch carriage, excluding F. E. T., $445.

T-10 Remington Rand div., of Sperry Rand Corp., 315 Park Ave. S., New York 10. Firm manufactures electric, standard, and a complete line of portable typewriters. The standard office typewriter has a 44-key, 88-character keyboard and is equipped with an 11-inch carriage. Margins are set by depressing a button on the carriage. A key release is provided to return jammed keys without soiling fingers. At additional cost the standard is available with an interchangeable type bar which allows symbols (any of 18 categories including chemistry) to be changed by the operator. Other features are: over 100 type faces available; transparent card holder; extra-long tab bar; available in six pastel colors. Price, excluding F.E.T., $225.

The Remington Noiseless typewriter is said to eliminate 85 per cent of the noise found in an

Standard manual typewriter from Remington-Rand Division, Sperry Rand Corp.

For more information about any product circle corresponding number on reader service card inside back cover.

So automatic and accurate you can start it and walk away!

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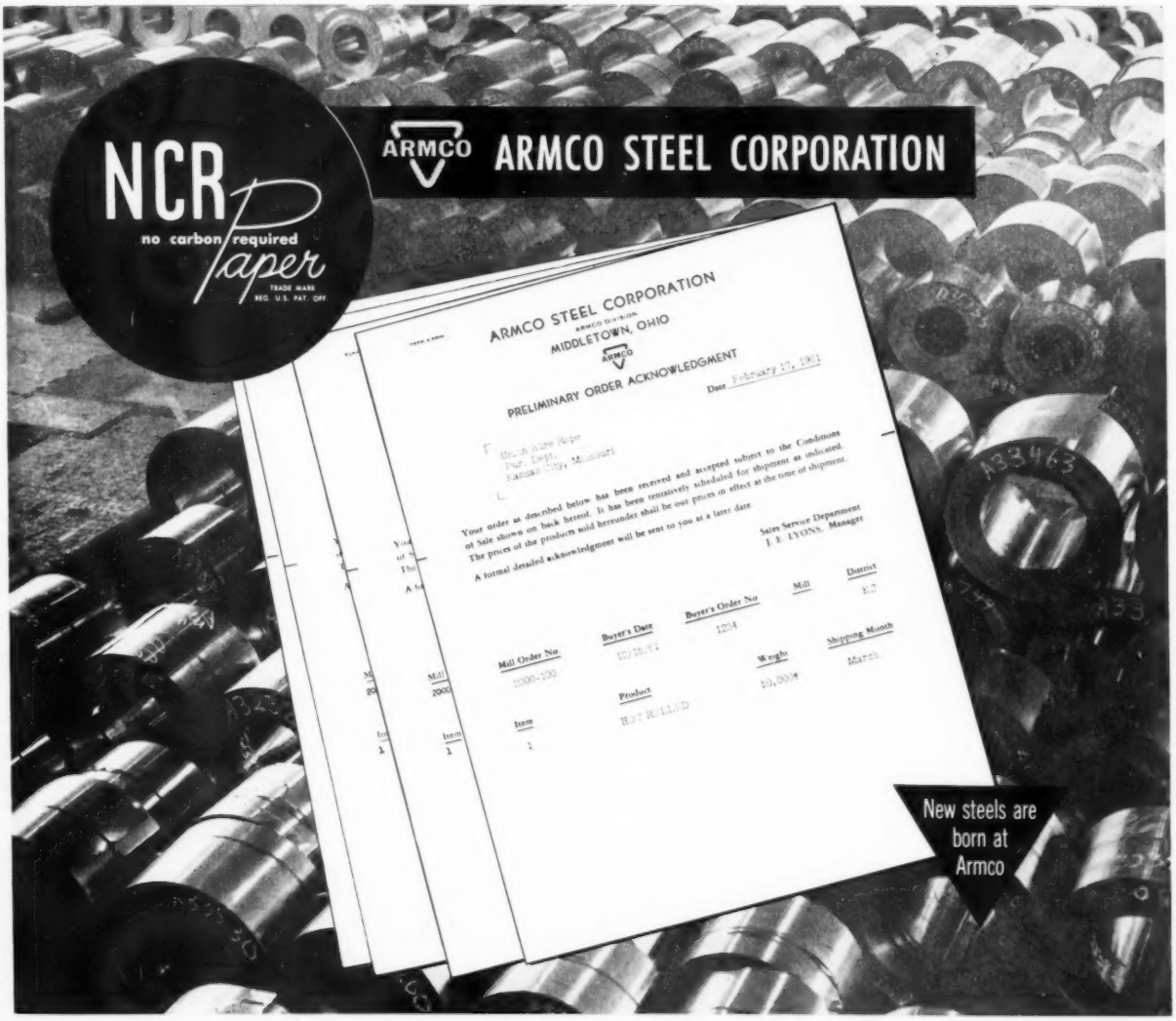
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(Circle No. 43 on Reader Inquiry Card)

ordinary standard typewriter. The machine has the usual adjustments found on the standard but differs in the mechanical principle responsible for its quiet writing. Whereas most standards operate on a hammer blow principle, the Noiseless employs a method of pressure printing. Price, with an 11-inch carriage, $272.50, excluding F.E.T.

The Remington electric typewriter has an impression regulator for each of the 88 characters on the keyboard. A platen position indicator sets right position for crisp printing of carbons. Margin settings are of the visible type found on the standard. Other features are: fractional back spacing; automatic repeat key; transparent paper holders; end-of-page indicator, use of fabric or carbon ribbons. Available in six colors and ebony. Price, with 13-inch carriage, and excluding F.E.T., $445.

Remington-Rand's new electric model.

The Remington Quiet-Riter Eleven portable typewriter, capable of typing on 11-inch-wide paper, is styled similarly to the office standard. It has 44 keys, visible margin settings, and a simplified method of changing the ribbon. There are shift lock and key on the right and left side of the keyboard as well as a tabulator key. Other features are: touch regulation; margin release; carry-case; choice of type styles. Price, $120, excluding F.E.T.

The Remington Premier portable has 44 keys and most of the features of the Quiet-Riter Eleven. It is of a more conventional design than the latter and is available with Pica or Elite type only. Price, $99.95, excluding F.E.T.

T-11 Royal McBee Corp., Westchester Ave., Port Chester, N.Y. The company manufactures a complete line of portable, manual, and electric typewriters, and two models of an automatic electric typewriting device.

The Model FP Royal Standard typewriter has "Twin-Pak," ribbon cartridges which permit the ribbon to be changed without finger contact with the material. The "Magic Margin" device is used for quick setting of margins; tab set and tab clear are of the positive push-button type. A line meter indicates when 8, 6, 4, and 2 lines of space remain on the sheet. A compensated keyboard is said to match the strength of fingers. Available in the following colors: Pink, Blue, Gray, Sandstone, Green. Price excluding tax, $249.50.

The Model FP Royal manual typewriter.

The Model HE electric typewriter

Introducing the all-new, brand

A new compact offset machine, styled and designed for all your business and office printing!

Available in a choice of smart, attractive DECORATOR COLORS!

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Smartly styled by Henry Dreyfus, foremost American Industrial Designer, the new Davidson Dualith 500 is compact, simple to set up and run, and will handle virtually all your company printing needs.

Faster, smoother, quieter, the Dualith 500 is designed for top-quality reproduction. It gives perfect register every time. Prints clean, sharp halftones; solids that are truly solid; crisp blacks, and clear, true colors. Every control is conveniently placed, simple to operate. All printing surfaces are readily accessible to make set-up or job-changes quick and easy. And every part of the Dualith 500 is designed, styled and built for years of dependable, trouble-free service.

Truly the most versatile small offset machine ever offered, the all-new Dualith 500 will print 10 or 100,000 copies of one, two, three or four-color work! It does regular offset, simultaneous two-sided lithography, economical dry offset, handles letterpress printing and imprinting, numbering, and "Davengraving" (printing *and* embossing).

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has the manual adjustments mentioned above ("Magic Margin," "Twin-Pak," ribbon cartridges, line meter) plus those pertaining to its electric mechanism: an impression regulator permits individual adjustment of each typing character; power roll of case-hardened steel; a half-space mechanism, an automatic hyphen/underscore key that repeats hyphens and gives perfectly aligned underscoring; use of fabric or carbon ribbons. Other basic engineering developments such as the double-bar headrest that eliminates afterbounce of the type key and the complete machine enclosure, are said to contribute to continuous machine performance. Available in

Model HE Royal electric typewriter.

five colors and 74 type styles. Price, excluding tax, $445.

Model SRP Royaltyper automatic electric typewriting machine is called a "single system" typewriter by the company; it can produce the code tape necessary for the automatic reproduction of letters. Using a modified Royal electric typewriter, the tape is punched from the keyboard as a by-product of typing a letter. Corrections in the tape can be made by the operator. Production speed is approximately 135 words per minute. Machine is available with 13- or 16-inch carriage; power requirements are 115 volts, 60 cycle A.C. Model SR is an automatic typing unit without the tape punching characteristic. The system can be operated by any qualified typist. Price: Model SRP, $1,950; Model SR, $1495.

Model SRP Royaltyper automatic electric.

T-12 Smith-Corona Marchant, 410 Park Ave., New York 22. Firm manufactures standard manual and portable typewriters, standard electric, "compact" electric, and portable electric, typewriters.

The Secretarial standard manual typewriter has a 44-key, 88-character keyboard and a horizontal half-space feature that allows the typist to justify right-hand margins. The machine is also available in a model that uses a fabric or carbon ribbon

The Smith-Corona Secretarial typewriter.

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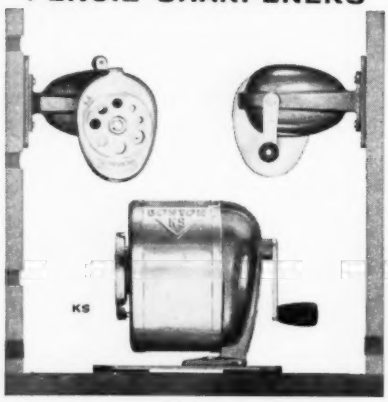
DAVIDSON DUALITH 500

BOSTON®

PENCIL SHARPENERS



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Now Boston's all-metal pencil sharpeners can be mounted anywhere. There is a Boston for every purpose and *the mounting kit fits every model.* All sharpeners are guaranteed for 1 year.

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FREE TRIAL
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UNIVERSAL SHREDDER COMPANY
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TOOLS OF THE OFFICE — The "compact"

The model 400 electric (left) and the model 200 "compact" electric are products of Smith-Corona Marchant. Model 200 also has an automatic carriage return.

interchangeably. Margins are instantly set by pushing buttons; tabulator is instantly cleared by pressing the "Total Tab Clear" key. A page gauge indicates, in inches, the amount of paper remaining at the bottom of the page. Other features are: Kwik-Kleen ribbon change; three-position ribbon indicator; choice of colors. Retail price, excluding F.E.T., $225.

The Pacemaker standard manual machine is available in carriage widths of 11 and 15 inches. Keyboard has 42 keys, 84 characters; there is a one-key, flick-set tabulator. Platen is interchangeable; margins are of the quick-set type; half-spacing feature allows margins to be justified. Price with 11-inch carriage, excluding F.E.T., $189.50.

The Galaxie manual portable typewriter is equipped with a 44-key, 88-character, keyboard, quick-set margins, a margin release key, key-set tabulation, touch control, and an interchangeable platen. A page gauge indicates the amount of paper remaining at the bottom of the page. The machine is available in several type styles, including script, and can be purchased in five colors, including jet black. Price, excluding F.E.T., $141.50.

There are two models of the Smith-Corona electric portable typewriter differing only in the size of carriage used: the Electra 12 has a 12-inch carriage and a writing line of 11 inches; the Coronet is equipped with a 10-inch carriage. The basic machine has an electrified keyboard with a manually-operated carriage. Weight is approximately 19 pounds. The 88-character keyboard is of a concave design similar to the larger electric models. Automatic repeat action is given on the cypher, underline or X key, and the space bar; any and all keys can be made repeat keys on special order. Touch and impression controls can be regulated; tabulation is key-set; margins are of the quick-set type; a margin release key is included. Other features are:

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"When you write as much as I do, you really appreciate a discovery like Dixon Ticonderoga's new 'Marvelead'."

THE JOSEPH DIXON CRUCIBLE CO.

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(Circle No. 17 on Reader Inquiry Card)

page gauge; line spacing controls; interchangeable platen; ribbon color selector. Price of Electra 12, excluding F.E.T., $184.50; price of Coronet, excluding F.E.T., $159.50

The Smith-Corona 200 is a fully electric typewriter of similar style and characteristics as the smaller Coronet. It is, however, a "compact" version of the larger 400 model electric. It is equipped with a 12-inch carriage and an 88-character keyboard. Power is by 110 V, 60 Cycle AC motor. However, other motors are available on special order. Machine has an automatic repeat space bar, underline, hyphen, and automatic dot; any key can be made to repeat on special order. Other features are: touch and impression controls; quick-set margins and margin release; tab set and tab clear; page gauge. Price, excluding F.E.T., $225.

The Smith-Corona 400 electric typewriter has a concave, 44-key 88-character keyboard, with characteristics not found on the compact 200. Carbon or fabric ribbon control is by push-button conveniently located on the face-board of the machine. The carriage is equipped with an automatic paper injector. A push-button word control provides normal, half, and expand spacing. The 400 has, among other features, repeat action for horizontal spacing, vertical spacing, back spacing, hyphen-underline, X-key, and repeat dots. Any key can be made to repeat on special order. Price, excluding F.E.T., $455.

Triumph portable typewriters, *SEE* Imexco Trading Corp.

T-13 Underwood Corp., Park Ave., New York 16. Firm has three models of electric and one standard manual typewriter all of which are manufactured in this country. Portable models weigh less than 15 pounds. All electric models have 44-key, 88-character keyboards, as does the Touch-Master Five manual machine. The Touch-Master Five is equipped with a one-key, key-set tabulator, touch-set margins, 11-inch carriage, five-position line spacing, and touch-control. A 10-key, key-set decimal tabulator model is also available. Machine can also be purchased with 13, 15, 20, and 27-inch carriages. Price, excluding F.E.T., $225.

The Touch-Master Five from Underwood.

The Raphael electric typewriter features "automatic variable spacing," a carbon ribbon, and may be purchased with 13 or 16-inch carriage. Other features are: title-centering scale, reverse tabulation, memory line finder, electric margins, and dual electric carriage return.

For more information about any product circle corresponding number on reader service card inside back cover.

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Puzzled by price—in a quandary over quality? Virco chairs and desks for office or home are budget priced and built to last. Check the quality construction features of this beautiful office furniture!

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This handsome welded tubular steel frame desk is available with Vircolite wood grain finish tops in two sizes: 18" x 33" and 20" x 40". Choice of Oriental Walnut top with bronze-brown frame or Platinum Walnut top with suntan frame. **Plus feature: excellent for use with business machines.** Companion chair is upholstered in quality vinyl plastic with urethane foam cushion.

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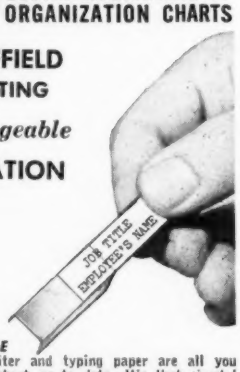

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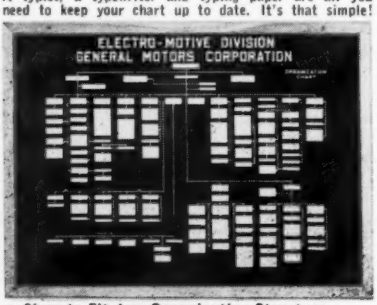
A typist, a typewriter and typing paper are all you need to keep your chart up to date. It's that simple!



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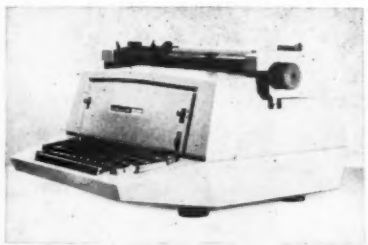
(Circle No. 34 on Reader Inquiry Card)

TOOLS OF THE OFFICE

Price, excluding F.E.T., with 13-inch carriage, $590.

The Forum electric typewriter can be purchased with a 10-key, key-set decimal tabulator as optional equipment. Machine has air-cushioned carriage return, impression control, and can use both fabric and carbon ribbons. May be ordered with 13, 16, or 21-inch carriage. Price with 13-inch cariage, excluding F.E.T., $445.

The Scriptor electric typewriter has automatic repeat of forward spacer, backspacer, and underscore, and uses a fabric ribbon. Machine can be purchased with 13, 16, 21, 27-inch carriage, or with 10-key, key-set decimal tabulator. Price, 13-inch carriage, excluding F.E.T., $350.



The Raphael electric by Underwood.

Carbon paper and typewriter ribbons

Carbon paper and typewriter ribbons can be ranked among the most misused supplies in the office. Employees who excel in typing and shorthand can seldom appraise the materials that ultimately affect the quality of work by which their performance is judged. A typist bent on scientifically testing a new product passed around by a salesman is too quickly satisfied by the finger-smudge test. The qualities needed to make good carbon papers are many, among the least of which is the smudge left on the inquiring finger.

Carbon paper is classified by the weight of 500 sheets of uncoated tissue stock, 20 inches wide by 30 inches long. The thickness of carbon paper is therefore designated in pounds. A pound number (from 4 to 20) may be given on the box or it may be categorized by the manufacturer into heavy, medium, or light weight papers.

Weight of paper is important

The weight and content of the tissue before processing is important in determining the absorbency and toughness of the finished product. As a general rule it can be said that *thick carbon paper decreases the sharpness of the copy*. Thick carbon absorbs the impact of the type hammer and diffuses the power stroke that pushes the carbon coating against the copy paper. The more carbons to be made, the lighter the carbons used. When making 1-4 copies a 7-pound carbon can be used; for 5-9 copies use a 5-pound carbon; for copies over nine use a 4-pound carbon paper. Variations from this basic plan will of course differ with the intensity of finish of the carbon paper.

The finish on carbon paper, like the lead in a pencil, is graded by its intensity, from light gray to black. Unlike pencils, carbon papers are not marked by a numbering scheme that is standard throughout the industry. The finish can be designated by number, symbol, or color name, depending upon the manufacturer. Jet Black may evoke a picture of ideal printwork in your

ERRATUM

In last month's "Tools of the Office" article, Ditto, Inc., 6800 McCormick Rd., Chicago 45, was inadvertently left out of "Offset" category. The firm makes a full line of offset duplicating equipment.

Mr. Roy Binder—Office Manager, Whitehead Bros., N. Y., N. Y.

"A Dixon Ticonderoga seems to keep its point forever, and it's smooth, too. That's new Marvelead for you. It's great."

THE JOSEPH
DIXON
CRUCIBLE CO.
Jersey City 3, N. J., Ticonderoga, N. Y.
Mexico City, D.F., Sandusky, O., Newmarket, Canada
(Circle No. 17 On Reader Inquiry Card)

mind but it could easily produce unsatisfactory copies under certain conditions. Because intense carbons are heavily treated, the ink is released more freely and makes a wider impression. In testing various products remember that, ideally, you want a hard finish carbon that gives you satisfactory color.

Coating reduces curl

Coating of the uncarbonized side of carbon paper with plastic, metallics, and waxes, have reduced the curling tendency that once provoked the typist to destroy a carbon before it was half-used. The coating also resists heavy-type blows, wrinkling, and slipping; it keeps the paper fresh-looking during a period when the carbon would have been destroyed because of its shabbiness. The value of carbon paper terminates when it is unmanageable or stops giving readable carbon copies, not when it looks used. If the paper is being punctured, switch to a heavier weight.

At the risk of becoming pedantic one should understand the variables not inherent in the carbon but which influence the quality of the finished product. The typewriter mechanism can determine the best carbon to use.

The standard action typewriter strikes the paper with a stabbing action that is motivated by pressure exerted by fingers on the keys. The noiseless machine, instead of stabbing, uses a push action that presses the type face against the paper. Carbon papers for use with noiseless machines (as well as standard machines operated with a light touch) are generally more intense. The electric typewriter uses a greater and more uniform force that is easily regulated for multi-carbon work. If the first few carbons in a pack are punctured by an electric typewriter, substitute a heavier carbon paper. A brief experiment can tell you the lightest carbon that will withstand the initial blow of an electrically activated hammer.

Type size can affect density

Smaller type faces, such as elite, are more effective on carbon thicknesses than pica or billing type. An intense finish of carbon paper that is satisfactory on a pica machine might cause letter density when used with an elite machine. The same principle can be applied in cases where the type is other than pica or elite.

The platen, or rubber roller, can give sharper copies depending upon its hardness. Softer platens tend to absorb the striking force of the type bar and may require a softer finish carbon. A hard platen usually requires a hard-finish carbon.

Multiple carbon sets and binders are designed to take the production of carbon packs away from the typist. A carbon binder can have any

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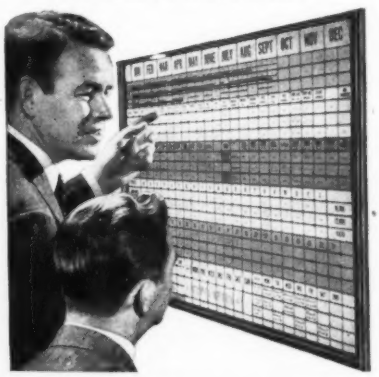

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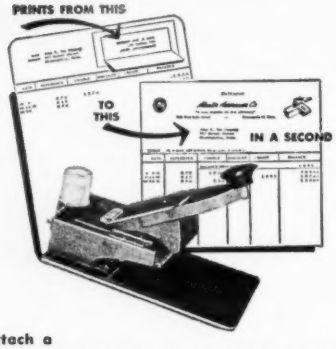

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number of carbon sheets attached at the top and ready to be interleaved with your choice of letterhead and second sheets. Carbon sets are available with second sheets already attached; the typist need only fit the letterhead to the pack. These products offer a variety of second sheets to suit the specific job. The carbons are usually of the one-time type, uncoated, and designed to give sharp copies throughout the pack.

Typewriter ribbons

Typewriter ribbons for correspondence work are either inked fabric ribbons or carbon ribbons. The inked ribbons can be divided into those made of a fabric that absorbs ink and those made of a fabric that attracts ink.

Cotton and silk fibers absorb ink, store it, and keep it fluid until pushed from the ribbon to the paper by the type bar. Nylon filament, which contains and absorbs little moisture, attracts fine particles of ink that adhere to its surface and are thus *adsorbed*. Nylon, cotton, and silk ribbon manufacturers strive to create a product that is dry to the touch, yet releases ink in a controlled quantity.

The quality of a fabric ribbon will depend, in part, on the fineness or fiber content of the fabric used. Coarse fabric with as low as 200 threads of imperfect quality per square inch will give results inferior to a finer fabric with a thread count of 320.

Cotton fabric ribbons can be purchased in many grades, from heavy duty, general purpose ribbon, to a sheer ribbon for executive correspondence.

Silk ribbons do not absorb ink as well as cotton, but they are made of thinner threads that produce a ribbon of less bulk, higher resiliency (thus longer life with hard striking machines) and one that gives sharp impressions.

Nylon ribbons retain the strength inherent in the nylon filament. Because the fabric is man-made, it is capable of meeting very rigid standards of quality control. Like silk, nylon is a thin fabric; almost three times as much ribbon can be coiled on an ordinary typewriter spool. It is free of lint and its superior strength makes it especially suitable for hard striking machines. A nylon ribbon may not release as much ink as other fabric ribbons when first used, but it tends to give an impression of standard intensity throughout the life of the ribbon. Nylon ribbons are available from utility grades, at a price competitive with cotton, to higher grades that compete with silk ribbons.

The U.S. Tariff Commission re-

Carbon sets such as these from Port Huron Sulphite & Paper Co., increase production.

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Deluxe Cotton **Silk** **2000 Nylon** **1270 Nylon**

In a test to determine the type-face character definition of various inked ribbon fabrics, the Standard Products Corporation, manufacturers of nylon typewriter ribbons, made this series of photographs. The first impression on the left was made from a deluxe cotton ribbon; the second impression from the left was made by using a silk ribbon. All impressions were made by the same typewriter. The 2000 Supersharp nylon and the 1270 Featherlite nylon ribbons are manufactured by Standard Products Corp., from fabric produced by Burlington Industrial Fabrics Co. The 1270 Featherlite nylon ribbon is in the experimental stage, not yet ready for the commercial market.

ported that in 1959 the amount of cotton used for typewriter ribbons was 7,823,000 square yds., as compared to 1,529,000 square yds, used to make silk ribbons, and 1,835,000 square yds. of nylon consumed. Although more cotton is consumed than nylon or silk, its use has decreased 14 per cent since 1955. Moreover, the use of silk ribbons has increased 55 per cent since 1955, and the consumption of nylon has increased 154 per cent since that time.

Carbonized ribbons of paper and film have increased in sale of linear feet from 3,435,000,000 in 1955 to 7,347,000,000 in 1959. The U. S. Tariff Commission figures represent an increase of 113 per cent.

There are no standard methods for indicating the grade of a typewriter ribbon. A ribbon might be marked heavy, medium, light, etc., or it could be numbered, depending upon the methods of the manufacturer. The touch of the typist, hardness of the platen, and the size of type affect the performance of typewriter ribbons.

Carbon ribbons

Carbon ribbons may have a base of Mylar, acetate, paper, or polyethylene and are destroyed after a single usage. Some typewriters will use both fabric and carbon ribbons by making simple adjustments; others require attachments at extra cost. A typewriter manufacturer may offer a model that will use fabric ribbon and another that operates with carbon ribbon. Although carbon ribbons are popular with electric typewriters, to increase the sharpness of impression, they can also be used with standard manual machines. A Mylar ribbon may be 1,200 feet in length; a polyethylene ribbon for Litho or general correspondence work can be 850 feet long. Carbon paper ribbons are available in a number of finishes in lengths up to 600 feet.

The staff of *Administrative Management* wishes to acknowledge the cooperation of the following manufacturers of carbon paper and typewriter ribbons that provided information and photographs: Interchemical Corp.; Kee Lox Mfg. Co.; Old Town Corp.; Philips Ribbon & Carbon Co.; Port Huron Sulphite & Paper Co.; Miller - Bryant - Pierce Div. of Smith-Corona Marchant, Inc.; F. S. Webster Co., Write, Inc.

Mr. Charles G. Thomas–Manager, Purchasing . . . Dresser Manufacturing Div., Dresser Industries, Inc., Bradford, Penn.

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BOOKLETS

Business education evaluated C-1

"The Education of Businessmen," is a review of recent investigation to determine the value of current business education in colleges and universities throughout the country. One of the two studies summarized was written by Professor Frank C. Pierson, Swarthmore College; the other report was jointly produced by Professor R. A. Gordon, California, and Professor J. E. Howell, Stanford. Both studies place business education on trial, according to Leonard S. Silk, author of the review: "They suggest that most of the business schools, because of their adherence to outworn doctrines, may not be meeting the requirements of business firms for competent, imaginative, flexible, and creative managers . . ." Committee for Economic Development, 711 Fifth Ave., New York 22.

Envelope inventory form C-2

The "Envelope Inventory Record" form provides an accurate method of checking envelope purchases and stock on hand. Space is provided on the form for a complete description of the stock and order information. A sample form is available upon request. Columbia Envelope Co., Inc., 2015 N. Hawthorne Ave., Melrose Park, Ill.

Management conference proceedings C-3

The Proceedings of the 1958 Annual Conference of the Washington chapter of the Society for Advancement of Management are available in an 80-page publication entitled, "Management in the Scientific Age." Discussion and research are presented under three main categories: How Should Research Activities Be Organized and Managed; Leadership in Management; Challenges to Management in the Scientific Age. Pages are also devoted to general discussion. W. E. Upjohn Institute for Employment Research, 709 S. Westnedge Ave., Kalamazoo, Mich.

National stock exchange C-4

The background, purpose, and requirements of the National Stock Exchange, Inc., are available in an illustrated booklet. Advantages the new exchange will have for corporate management, stockholders, management, and shareholders are also outlined. The National Stock Exchange, Inc., 6 Harrison St., New York 13.

Planning aid C-5

The "Supervisor's Production Planner," shirt-pocket secretary and utility booklet, contains a page devoted to each day of the month with space for noting deadlines and other data. A fold-out planning calendar on the inside front cover allows the month to be reviewed quickly. The Dartnell Center, 4660 Ravenswood Ave., Chicago 40, Ill.

CATALOGS

Contemporary office furniture C-6

ODI, 136 William St., New York. Full-page illustrations of contemporary executive office furniture are included in a 36-page catalog. Specifications and prices are given for credenzas, tables, desks, bar, chairs, and hi-fi cabinet.

Letterhead design C-7

Gilbert Paper Co., Menasha, Wisc. Engraved and embossed letterheads are bound in a spiral-bound brochure that also includes an analysis of each award-winning design. Embossing and engraving processes are explained.

Index supplies for data processing C-8

G. J. Aigner Co., 426 S. Clinton St., Chicago 7, Ill. "Indexing . . . vital to data processing," describes the company's indexing products. Among the items featured are continuous strips of index inserts, tabulating card guides, control-punched indexes for continuous forms, and special guides for filing punched cards.

Executive office furniture C-9

Dunbar Furniture Corporation of Indiana, Berne, Ind. A collection of executive office furniture, designed by Edward Wormley, is displayed in an 80-page catalog. Included are desks, cabinets, conference tables, desk and conference chairs, upholstered seating, and occasion pieces. Each piece is photographically illustrated; variations in basic designs are shown in line drawings.

Business form joggers C-10

Syntron Co., Homer City, Pa. The company's new two, three and four-bin business form joggers are depicted in an illustrated catalog. The business form jogger can be used to align checks, punched cards, account cards, credit cards, payroll cards, and many other forms.

Computer programming guide C-11

Bendix Computer Division, 5630 Arbor Vitae St., Los Angeles 45. "A Solution to the Profit Squeeze," is a report of how the G-20 computer can use multiple regression analysis and linear programming to reduce overhead costs, excess inventories and production waste. The booklet describes a mathematical model —a closed-loop system—in which important production information is made available for management decision.

Data processing equipment C-12

Clary Corp., Dept. 691, 408 Junipero St., San Gabriel, Calif. An illustrated booklet entitled, "This is the New Clary," describes the capabilities and facilities of the company in its expanding role of computer manufacturer and data handling equipment maker. Among the products shown is the DE-60 computer, standard data and militarized printers, add-punches, sales recording devices, and peripheral data processing equipment.

Paper cutters C-13

Michael Lith Sales Corp., 145 W. 45th St., New York 36. An illustrated booklet presents the "Triumph" line of paper cutters for office and industry, and the "Destroyit" office paper shredder. Specifications and the price of each model are given with an explanation of the machine's abilities.

Dictating hints C-15

The SoundScriber Corp., 6 Middletown Ave., North Haven, Conn. Twenty suggestions for improving dictation are given in a cartoon-illustrated brochure.

Steel office equipment C-14

Lyon Metal Products, Inc., Aurora, Ill. A complete line of steel office equipment is depicted in catalog 100-k. The 100-page publication includes new models of office chairs, bookcases, and accessories.

Folding tables C-16

Howe Folding Furniture, Inc., 1 Park Ave., New York 16. A 16-page catalog describes a line of folding tables, chairs, and trucks for business and institutional use. The catalog gives a technical description of each product, including the materials used, moldings, and finishes.

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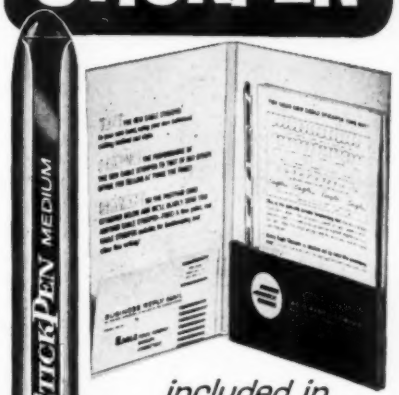

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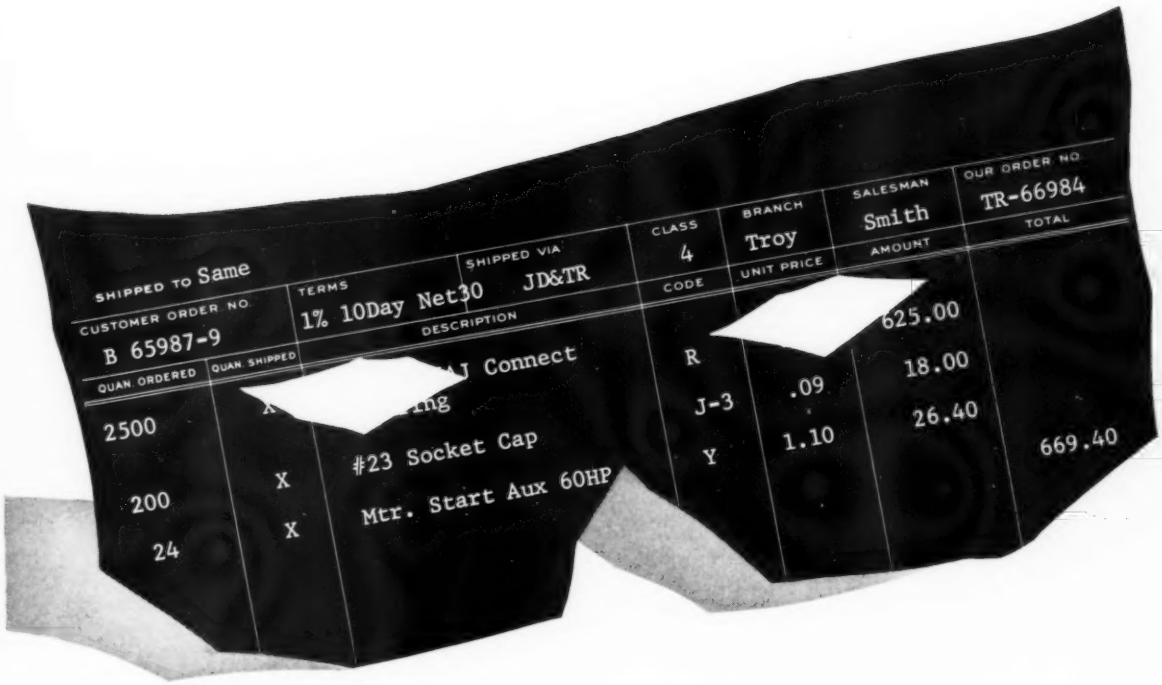

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Editorial

BEHIND THE MAN IN ORBIT

ON December 17, 1903, human beings for the first time in history took to the air in directed flight.

On April 12, 1961, the Soviets announced that they had successfully orbited a man around the earth and that he had returned safely.

No more dramatic example could be found of the immense acceleration of scientific and technological break-throughs that has characterized this century. Technically, the world has made greater strides in the last 50 years than in all the centuries of human history.

And the acceleration is continuing—in every field.

Yet all these accomplishments depend on previous discoveries, previous work, previous experiments. Ultimately, they all depend on information—information properly organized, channeled, and used. There is good reason to believe that many of the Russians' spectacular achievements stem from the fact that all research efforts and knowledge are centrally controlled and coordinated in the Soviet world: they do not have entire teams doing work that is being duplicated by another group, or, worse still, has already been done by another group.

The principle is the same as that of a central information point where all needed data are readily available to anyone who needs them—a principle long paid lip service by business but still honored far more in the breach than in the observance. The necessary corollary to effective data processing is an intelligent approach to information retrieval.

We can expect to see increased government efforts to coordinate and consolidate the information available to American research and science, particularly in the defense establishment. In the process new techniques and machines may be developed or perfected, just as today's business computers were fathered by the first computers built during World War II. A close watch on such developments is mandatory for business. Scientific information retrieval is still a largely unexplored area, but it is an area that can bring great rewards to the company that first exploits it imaginatively and completely.

ONE OF FOUR OFFICES at "Brown" before modernization. Note crowded arrangement; lack of work space; cluttered, inefficient atmosphere.

• • •

SAME OFFICE "AFTER"—Each employee gained 60% more work surface, 30% more drawer space, 20% more work output.

An Easy Way to Reduce Office Costs

TITLE FIRM SAVED SPACE AND BOOSTED EFFICIENCY WITH MODERN FURNISHINGS AND BETTER LAYOUT

Indianapolis, Ind.—L. M. Brown Title Company gained needed space for larger work stations and more of them by combining modern furnishings and new office layout.

Shaw-Walker space-saver equipment, geared to every job function, *freed space* for the addition of four badly needed work stations, and point-of-use files at ten more stations.

The modernization paid another dividend—*efficiency increased 20%*, and morale reached an all-time high.

A new layout by Shaw-Walker's Paul Holcomb in collaboration with L. M. Brown's Executive V. P. Sullivan *organized the work flow* by relating work stations to activities performed. The improved layout *reduced employee travel by half* and entirely eliminated distracting interruptions caused by customer traffic.

Clutter-Proof Expan-Desks give staff members more work surface (*average increase, 50%*) and provide extra drawers for storage and filing—all within quarter-turn reach.

Management offices were equipped with Carlyle—the desk Shaw-Walker designed for working executives. Carlyle's energy-saving conveniences provide specific in-drawer space for everything needed in, on, or around the executive's desk.

It's easy to see for yourself how Shaw-Walker can help you effect similar economies. The complete, 5000-item Shaw-Walker line is pictured, described, and priced in our new 248-page Office Guide catalog—ideas and equipment to save time, save space, and cut office costs. Free to office executives. Request on business letterhead, or phone your Shaw-Walker representative.

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